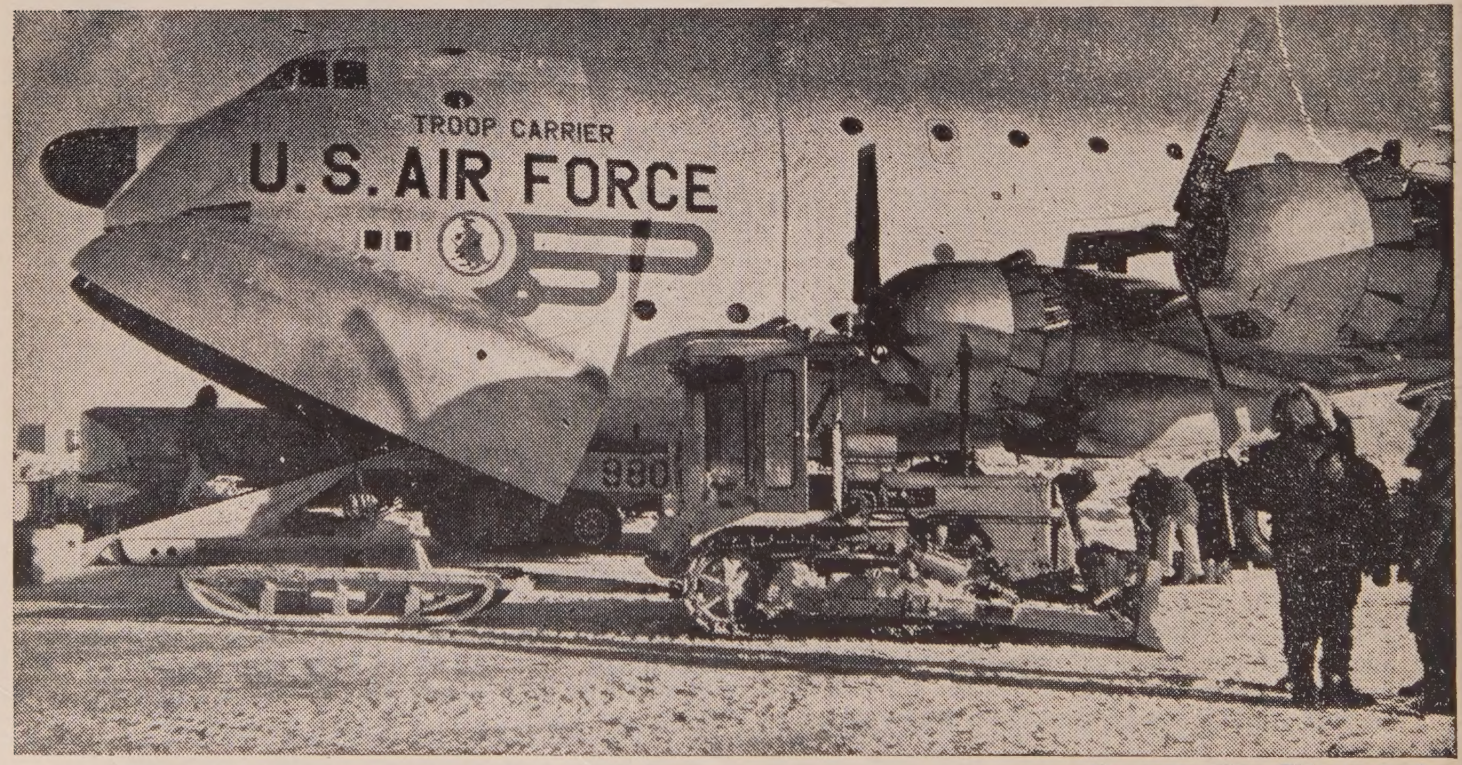
no 43

THE POLAR TIMES

First humans to set foot on the geographic South Pole in almost forty-five years were seven Americans, flown in on Oct. 31. The photograph above, one of the first released by the Navy, shows Rear Adm. George J. Dufek(right), commander of Navy Task Force 43 in the Antarctic, after he had planted the American flag on a spiked staff in the snow. With him is Capt. William (Trigger) Hawkes, of Jersey City, N. J., co-pilot on the flight. The last previous expedition to reach the pole on foot was a British naval party headed by Capt. Robert Scott, which arrived on Jan. 16, 1912. That group perished on its return journey.

—San Diego Union Staff Photo

Richard Chappell, an Explorer Scout, displays warm weather garb for Antarctic expedition he joined.



The Globemaster, State of South Carolina, being unloaded at McMurdo Sound after its 2000-mile flight from Christchurch Airport. In the foreground is a United States Navy D-2 tractor, which was used to haul supplies across the ice from the runway to the camp site. This type of tractor was used on the original clearance and levelling for the runways on the ice.

The Polar Times

No. 43. DECEMBER 1956.

Navy Team at Little America V Stands Polar Life 'Excellently'

Messages Over a Ham Radio Stress Good Health, Fine Food and High Morale

By BERNARD KALB

WARREN, R. I., July 13—Word came today from the seventy-three Americans now wintering at Little America V that they were standing up "excellently" against the frigid ordeal of the Antarctic polar night. The messages were received here over an amateur's radio set.

Navy officers and enlisted men at the isolated outpost, set up on a block of ice three times the size of New York State, said their health and morale were "first-rate" despite the disappearance of the sun, numbing temperatures and imprisoning snowfalls.

As some of the volunteers themselves put it:

"We haven't seen the sun since it dipped below the horizon April 19 and we won't see it again until Aug. 22. We have had mercury readings as low as minus 61 degrees on June 25. We have piled up 113 inches of snow since February. Sounds terrible, doesn't it? Yet most of us feel excellent, first-rate, both in health and morale. Honest."

Life at Little America, 12,000 miles south of Big America, was described to a "ham" radio set-up operated by C. Newton Kraus here. Little America's call letters are KC4USA, and the call letters of Mr. Kraus' radio equipment are W1BCR.

The chat between the two stations ran for more than five hours, beginning at 2 A.M. Most of the time reception was loud and strong.

The men drew a vivid and affectionate picture of the day-to-day life at the base set up on the Ross Shelf ice in January in support of the United States role in the International Geophysical Year, 1957-58. Eleven nations, the Soviet Union included, have pledged their scientific forces to give the world's most hostile continent its most intensive examination in history.

These are some of the things the men mentioned today:

Food: "It's terrific. Just about everyone has gained weight."

Work: "We're getting ready to go out in October to build a scientific observatory in Marie Byrd Land. The men re keeping their vehicles and equipment in running order."

Health: "Excellent. No colds. no viruses, no nothing down here. It's too cold for bugs."

Temperatures: "The high today was minus 23 degrees, the low minus 39. Our average temperature for June was minus 32 degrees."

Winds: "The most powerful blow we experienced was on July 2. Winds worked up a speed of 68 knots. The winds, by the way, are a blessing, since they act as a sort of broom in sweeping the snow off the roofs of our prefabricated buildings."

Time: "It's passing very quickly, but we wouldn't mind if it passed even more quickly. We haven't seen a soul since March 10, when the Glacier's crew waved farewell. We can't wait until next November or December, when Operation Deepfreeze II starts arriving."

Without a doubt, the single item that won the most applause from the men was the ham radio set-up. It went into operation March 16, and since then Little America has spoken with 519 amateur radio operators in the United States.

By connecting a telephone to the ham, radio set, amateur operators in the United States have made it possible for seventy of the wintering-over men to speak directly with their families. This operation has placed Little America, which is about 800 miles from the South Pole, at the other end of the living-room telephone.

Today, Mr. Kraus, who has made a hobby of keeping the Little America men in touch with their families, put through three phone calls—two in Rhode Island and one in Florida. There was very little of Little America in the conversations; it was mostly about: "Is the car insurance paid up?" "Did you get a birthday present for your aunt?" and so forth. The men may have been several continents away from home, but their families and relatives were still uppermost in their minds.

In the course of the early morning conversation, the Navy men noted that their own story of high morale and good health was equally true of the United States base at McMurdo Sound, 400 miles west of Little America. Ninety-three Americans are wintering there. That base, too, has a ham radio set up—its call letters are KC4USV—but the base could not be reached this morning.

Navy Issues Figures On Antarctic Program

WASHINGTON, Aug. 2 (AP)—The Navy said today its part in the coming year's phase of Operation Deepfreeze in the Antarctic would entail the services of twelve ships, thirty-eight aircraft and 3,525 men.

The Navy will land men and equipment to build five scientific observation bases, one at the South Pole, for the 148 civilian scientists assigned to study the secrets of nature from the bottom of the world during the International Geophysical Year, 1957-58.

Rear Admiral Richard E. Byrd will again be in over-all charge of the expedition, which will get under way next month when Navy and Air Force planes fly from the United States to New Zealand. Rear Admiral George Dufek will be in direct command.

When the main Antarctic expedition returned early this year it left behind 166 men whose job has been to prepare for the coming of three naval task forces and Air Force transports this fall.

NAVY MEN MEET ANTARCTIC'S TEST

Selection of Winter Parties Successful — Military Order Is Stressed

By WALTER SULLIVAN

WELLINGTON, N. Z., Dec. 13—From 11,000 volunteers the United States Navy picked 166 men to spend the recently ended winter night in Antarctica and they were picked well.

After living for almost two months with these men, who were stationed at McMurdo Sound and at Little America, one is impressed by the absence of cliques and feuds that so often tear wintering-over parties apart. The record was not flawless. One man reportedly broke under the strain, but he was clearly an exception.

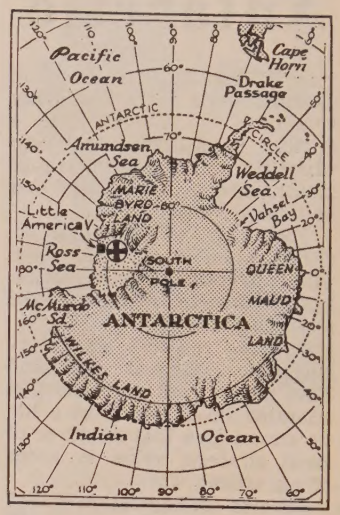
The officer in large measure responsible for assembling a compatible team was Comdr. Herbert Whitney of Arlington, Mass., who was in command of the two bases.

They had to have special qualifications, men with experience in construction, driving tracked vehicles, engine repairs, and so forth, were needed. It was emphasized that, in terms of personality, the requirements were comparable to those for submarine duty.

Among the candidates for the Navy expedition, Lieut. Comdr. Isaac M. Taylor, who was to be medical officer at McMurdo Sound, noticed one man whose reactions troubled him. The man was examined by a psychiatrist, whose report was favorable, but according to Commander Whitney, the strain of the long winter, in close confinement with his companions, was too much for the men in question. He had to be evacuated when contact was first established with the outside world in October.

One of the problems that confronts the Navy is selecting men for such duty is whether or not to make the selection on a volunteer basis. After his experience of the past year, Dr. Taylor feels the men should be selected for their qualifications and ordered to go.

This, he says, would eliminate men who are "running away" from something. One of the most searching lines of questioning used by Dr. Taylor and his associates in screening applicants was to ask them why they wished to winter in Antarctica. The desire to escape from emotional insecurity or family problems seems to have been a potent factor in many cases. According to Commander Whitney, it was the young unmarried men who were the most restless.



U. S. Antarctic base (cross)

Navy Men Ask Duty in Antarctic

DAVISVILLE, R. I. (AP).—You wouldn't think there'd be many volunteers for a mission to a frigid, uncivilized wasteland where the only guarantee is four months of being snowbound and in total darkness.

The Navy didn't think so, either, when it asked for men willing to spend eighteen months in the Antarctic, manning seven research stations.

But the response was overwhelming. Several thousand Navy men offered to aid the vast scientific investigation in a little known area that might be of great strategic value in event of an atomic war.

Selected for "operation bravo" were nineteen officers and 152 enlisted men. They were chosen on the basis of professional capability, maturity and physical fitness. The detachment is winding up special training at the Atlantic Fleet Construction Battalion headquarters here.

The basic mission of "Bravo" is to support American civilian scientists who will study secrets of nature at the bottom of the world. Some of the Navy men also will do research. Eight members of the group, with nine scientists, will spend the winter at a station at the South Pole, where only nine men have ever set foot.

Who are the men who volunteered for such a hazardous adventure? And Why?

Almost a third are typical family men; the rest, carefree bachelors. Their reasons vary.

Electrician A. H. Patterson of Charleston, S. C.—"Building power units and stringing lines in a region never before inhabited by man is something a construction man dreams about."

Lt. John E. Zoller of Shelby, Mont., Protestant chaplain, said he volunteered "because it is a challenge."

Radioman Donald L. Bradford of Mesa, Ariz., plans to study for a college degree. "The Antarctic will be full of evenings with nothing to do and no place to go," he said.

The Polar Times

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AUGUST HOWARD, Editor

THE POLAR TIMES highly recommends "The Polar Record," published by the Scott Polar Research Institute, Cambridge, England.

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Membership dues are one dollar a year, which entitles members to receive THE POLAR TIMES twice a year.

Back issues are 50 cents each. Bound volumes, covering five years, are $8.00 each.

AP News Caught In Little America

By the Associated Press

Syracuse, N.Y.

Seventy-four men manning a lonely, half-buried base at Little America in the Antarctic have been getting their news of the outside world through the Associated Press.

They have been picking up AP broadcasts beamed at South America.

"We've been using a lot of your stuff—world news, baseball results, everything," said Comdr. Herbert V. Whitney, base commander, in a short-wave interview with an AP correspondent in Syracuse. "We've just picked it up on our radio teletype without asking anybody. I hope you don't mind."

AP copy, Commander Whitney said, provides the bulk of news appearing in the base's own daily paper, The Little American.

U. S. POLAR BUILD-UP NEARS COMPLETION

AUCKLAND, New Zealand, Oct. 5—The build-up for the great United States airlift to the Antarctic is now reaching its peak in New Zealand. For months ships and planes have been delivering supplies ready for transportation.

The largest concentration of long-range aircraft yet seen in New Zealand is now massed on airfields around Christchurch in South Island, the final departure point for the Antarctic flights.

Yesterday Auckland airport, a staging point on the way to Christchurch, held nine big American planes, the largest assembly of United States military aircraft since the war.

Rear Admiral George J. Dufek, operational commander of the Deepfreeze expedition, is now in New Zealand personally directing the last stages of preparation.

Ten United States Navy aircraft, Skymasters, Neptunes, Dakotas, and eight United States Air Force Globemasters will form the backbone of the airlift. They will not make a massed flight on the lines of the initial venture last year but will fly in smaller groups according to conditions.

SCIENTISTS GATHER FOR POLAR ASSAULT

DAVISVILLE, R. I., Oct. 16—Final plans are being discussed here this week for man's newest assault on the south polar continent.

Seventy scientists are here at the United States Navy Construction Battalion center for a week-long program of orientation.

Naval personnel who will service the scientific expedition have met here for the briefing session.

Some of the questions that may be answered in the International Geophysical Year, July, 1957, through December, 1958, are these:

How is the south polar continent linked with other continents? How old are its rock formations in relation to rocks of other continents Is the inland ice receding or growing? Did the king penguins originate on the continent? What are the mineral resources of the continent?

SEABEES OFF TO ARCTIC

Will Begin Training for Role in South Pole Expedition

QUONSET POINT, R. I., July 10—Twenty-one Seabees departed for Greenland today to learn how to outwit the ice in preparation for the 1956-57 Navy expedition to the Antarctic.

With Lieut. Robert White of Glen Falls, N. Y., in command, the detachment flew out of the Navy base here for the Thule Air Force base. The unit will spend six weeks in Greenland, including some time on the ice cap, studying crevass detection, ice-tunneling work and the setting up of snow-compacted air fields.

Later this year, the twenty-one men will sail for Antarctica aboard the ships of Operation Deepfreeze II. They will be among a larger unit that will spend the winter on the frozen continent during 1957.

New Ice-Breaker Sails to Antarctic

BOSTON, Sept. 17 (AP).—The USS Glacier, the Navy's newest icebreaker, is en route to the Antarctic to kick-off operation Deep Freeze II, the United States' contribution to the 1956-57 Geophysical Year polar expedition.

The Glacier sailed yesterday with a 340-man crew for an 8-month tour of the Antarctic. It is scheduled to stop today at Davisville, R. I., to pick up supplies before proceeding on the 12,000-mile trip.

The Glacier's first mission will be to serve as beacon and rescue ship at the edge of the polar Ross Sea ice back for Navy and Air Force planes which will fly from New Zealand to McMurdo Sound, Antarctica.

Adm. Dufek Off On Polar Study

WASHINGTON, Sept. 17.—Rear Adm. George Dufek, commander of the Navy's Antarctic expedition, left Quonset Point, R. I., by air today for New Zealand.

WELLINGTON, N. Z., Wednesday, Oct. 17 (Reuters)—Rear Admiral George Dufek landed early today at McMurdo Sound in the Antarctic, according to reports received here. The admiral, commander of United States Task Force 43, which is helping scientists in the Antarctic operation, traveled on a United States Navy Skymaster with a reporter and a crew of six.

ANTARCTIC HEADS APPOINTED BY U. S.

Siple to Command Station at South Pole—3 Other Scientists Selected

By WALTER SULLIVAN

The United States has selected four scientist-explorers to head its outposts in Antarctica during the International Geophysical Year, 1957 to 1958,

The leader of the station to be airlifted to the South Pole will be Dr. Paul A. Siple, who first won fame when he went to Little America in 1929 as a Boy Scout. Dr. Siple has specialized in polar problems ever since and has accompanied almost all United States expeditions to Antarctica.

The scientific party at Little America V will be led by Dr. Albert Crary, a geophysicist who, in 1955, led a party that established a camp on T-3, a floating ice island in the Arctic.

The leader of the party to be set ashore in Vincennes Bay, near the junction of the Knox and Budd Coasts, will be Dr. Carl Eklund. He is perhaps best known for a memorable sledging journey he made in 1940-41 with Capt. Finn Ronne. Their 1,260-mile trek demonstrated that Alexander Island was in fact an immense island.

Captain Ronne, who is now on active duty in the Naval Reserve, will command the station on the Weddell Sea coast. On his last venture to Antarctica he led his own expedition to Stonington Island on the opposite side of Palmer Peninsula from the Weddell Sea.

The Pole station is expected to subject its occupants to conditions never before experienced by human beings. Only in one season—that of 1911-12—have men set foot at this remote point at the bottom of the world. They were the parties of Capt. Robert F. Scott of Britain and Roald Amundsen of Norway.

Since then several flights have been made over the Pole, but the conditions to be expected there during the six-month polar night can only be speculated upon.

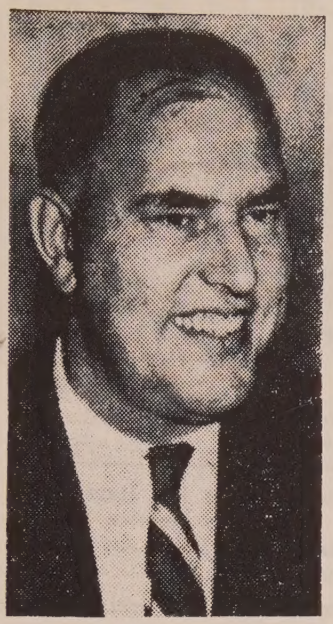
Dr. Siple is also serving as deputy to Rear Admiral Richard E. Byrd, who is in charge of the United States Antarctic program. Dr. Siple has been lent for that job by the Army, where he is scientific adviser to the Chief of Research in the office of the Deputy Chief of Staff for Research and Development.

His party at the Pole will consist of nine civilians and eight Navy men. The latter will include radiomen, electronics maintenance men and a Navy physician, Lieut. Howard Taylor.

Dr. Siple will probably be the only veteran of previous Antarctic experience among the members of the polar party. Dr. Crary has not been to Antarctica, but has had extensive experience in the Arctic. Dr. Eklund is a fellow of the Arctic Institute of North America.

Final decision in the selection of the station leaders is said to have rested with the United States National Committee for the International Geophysical Year.

Observer for South Pole Picked



Dr. Paul A. Siple

The United States is planning outposts at the South Pole (1), Little America V (2), Vincennes Bay (3) and the Weddell Sea Coast (4).

Weatherman To Head Byrd Station Scientists

GEORGE R. TONEY

WASHINGTON, Dec. 23 (AP) — George R. Toney, an experienced cold weather authority, today was appointed scientific leader for Byrd Station.

Toney will head a staff of 16 geophysicists who will work at the station, which is being established on the Rockefeller plateau of Marie Byrd Land.

Toney is an arctic logistics assistant with the weather bureau in Washington. He has spent about 27 months since 1951 in the polar regions.

Chief Scientist Named For U.S. Antarctic Task

WASHINGTON, Sept. 26—The National Academy of Sciences said today that Dr. Harry Wexler would be in charge of all United States scientific efforts in Antarctica during the International Geophysical Year 1957-58.

Dr. Wexler is director of meteorological research for the United States Weather Bureau. His title in the Antarctic program will be Chief Scientist. Albert P. Crary, who will head the station at Little America, will be his deputy.

The announcement was made by Dr. Laurence M. Gould, president of Carleton College, Northfield, Minn. Dr. Gould is chairman of the Antarctic Subcommittee of the United States National Committee for the International Geophysical Year, operating under the National Academy of Sciences. The national committee administers the United States' $39,000,000 program for the period of world-wide scientific observations, July 1, 1957, to Dec. 31, 1958.

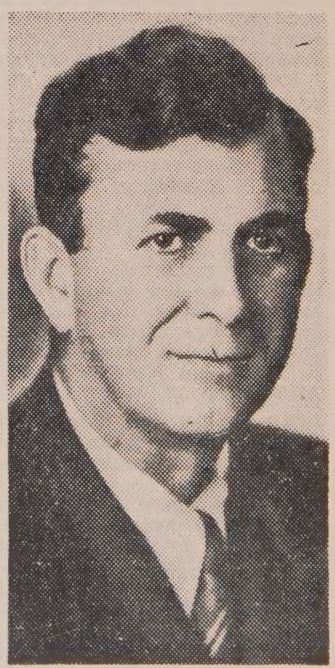
Geologist Heads U.S. Antarctic Study

WASHINGTON, Dec. 19 (AP) — Dr. Laurence McKinley Gould, president of Carleton College, Northfield, Minn., was named today to be director of the United States Antarctic program for the International Geophysical Year 1957-58.

This was announced jointly by Dr. Detlev W. Bronk, president of the National Academy of Sciences, and Dr. Joseph Kaplan, chairman of the United States National Committee for the International Geophysical Year.

A veteran of several Arctic and Antarctic expeditions Dr. Gould was second in command of the 1928-30 Byrd Antarctic expedition. He is a geologist by profession.

Dr. Gould will direct the scientific program of geophysical observations planned for the Antarctic continent during 1957-58 at six stations, one of them a joint United States-New Zealand effort.



Dr. Laurence McK. Gould

ANTARCTIC CRASH KILLS 3 IN PLANE

5 Are Injured in U. S. Flight From New Zealand

By WALTER SULLIVAN

CHRISTCHURCH, N. Z., Friday, Oct. 19—One of six United States Navy planes flying into Antarctica crashed on the shelf ice yesterday, killing three of its occupants and injuring five, the Navy reported today.

The six planes flew to the United States base at McMurdo Sound from Wigram Field near here. A seventh plane carrying Rear Admiral George J. Dufek, commander of Operation Deepfreeze, flew in a day earlier without incident.

The six planes in the flight began taking off here at 6 P. M., Wednesday, and arrived at McMurdo Sound in succession Thursday morning after the 2,250-mile flight.

The airstrip on the ice at the head of McMurdo Sound had been smoothed and hardened by teams of the men who wintered in Antarctica. They were reported to have tried three sites before finding one with at all suitable ice conditions.

Navy Identifies Casualties

WASHINGTON, Oct. 18 (AP)—The Navy identified here the Navy men killed and injured in the plane crack-up at the United States base at McMurdo Sound, on the west side of Ross Sea, Antarctica.

The Navy said those killed in the crash were:

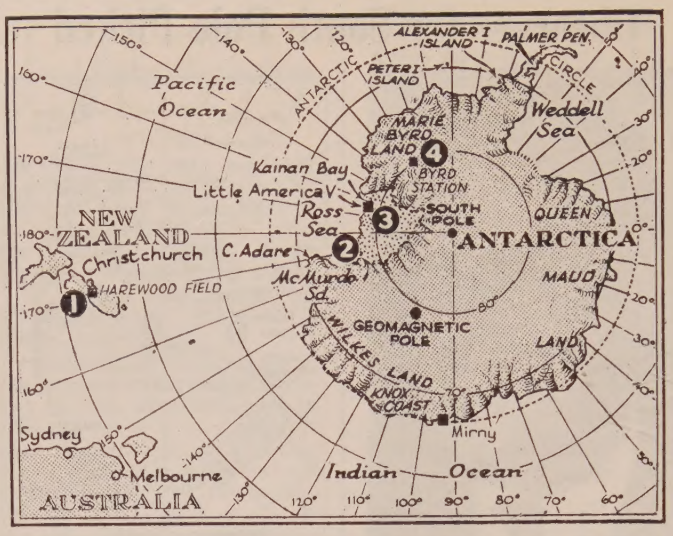
Lieut. David M. Carey, pilot, husband of Mrs. Norma Carey, 526 Frisco Road, Warrington, Fla.

Aviation Machinist Mate 1/c Marion O. Marze, husband of Mrs. Minnie B. Marze, Waxhaw, N. C.

Aviation Electronic Technician Charles S. Miller, husband of Mrs. Carol Ann Miller, Providence, R. I.

The Navy listed as critical three of the five injured. They are: Capt. Rayburn A. Hudman, Marine Corps, husband of Mrs. Josie Hudman, Saunderstown, R. I.; Ensign Kenneth L. McAlpine, son of Mrs. Ruth C. Lewis, Ambier, Pa.; Sgt. Robert C. Spann, Marine Corps, husband of Mrs. Ruth L. Spann, Eggertsville, N. Y.

The condition of the other two injured was described as fair. They are: Aviation Machinist Mate 2/C Clifford C. Allsup, husband of Mrs. Virginia M. Allsup, East Greenwich, R. I.; Aviation Electronic Technician 2/C Richard E. Lewis, son of Mr. and Mrs. Watson S. Lewis, Clarks Summit, Pa.



FLIGHT TO ANTARCTIC: Eight planes left Harewood Field (1) for McMurdo Sound (2). Little America V (3) will support the bid for a base at the Pole. Air drops will be made at Byrd Station (4).

U. S. PLANES BEGIN SOUTH POLE TASK

Globemasters Leaving New Zealand to Open Way for Establishment of Base

CHRISTCHURCH, New Zealand, Oct. 20—As a prelude to the United States' effort to place an outpost at the South Pole, the first of eight Air Force Globemaster transport planes took off today for Antartica.

The planes are to aid the United States Navy Expedition assigned to the task of setting up scientific stations at five points on that continent.

The planes' first task is to ferry in about 100 tons of supplies for the present camp at McMurdo Sound and for their own operations there. Each of the first two planes is carrying a Canadian Otter ski plane as cargo.

At the controls of the first Globemaster was Col. Horace A. Crosswell, commander of the Sixty-third Troop Carrier Group, Eighteenth Air Force. The group, normally based at Donaldson Air Force Base, Greenville, S. C., has been assigned the task of dropping supplies at the pole.

Among those on this afternoon's flight was Maj. Merle Dawson of the Army, who will command the party that will seek to blaze a trail to that point, at Long. 120 degrees W., Lat. 80 degrees S. The group that set forth to do so last year had to turn back. The starting point for the journey will be the present camp at Little America V, on Kainan Bay.

Now that it is spring there, the 166 men who wintered at Little America and McMurdo Sound have been preparing airstrips and packaging supplies to be dropped at other stations.

4th Dead in Plane Crash in Antarctic

WASHINGTON, Oct. 19 (AP).—The toll in the crash of a Navy plane on the Antarctic ice shelf was raised to four dead today, with the death of Marine Capt. Rayburn A. Hudman. Of the remaining four injured, two were hurt critcally.

Antarctic Casualty Improves

AUCKLAND, N. Z., Nov. 19 (AP)—Sgt. Robert Spann of Buffalo, N. Y., one of four survivors of the United States Navy Neptune crash at McMurdo Sound, Antarctica, a month ago, has regained consciousness. A United States Navy spokesman said today Sergeant Spann had opened his eyes but could not speak. He will remain in Christchurch Hospital until fit to travel.

Navy Yields To Penguins

WASHINGTON, Dec. 16 (AP).—The Navy announced today it will shift the site of its International Geophysical Year station in the Antarctic partly because a teeming colony of penguins makes plane landing hazardous.

The base for United States and New Zealand scientists will be set up at Cape Hallett rather than at Cape Adare.

A DRAMATIC RACE WON IN ANTARCTIC

4 Tractors Clear Disabled Giant Plane From Runway for Another's Landing

McMURDO SOUND, Antarctica, Oct. 21—A crucial race developed at this Antarctic outpost early today between an Air Force Globemaster and four caterpillar tractors.

The race grew out of a mishap that had blocked the base's runway. Another Globemaster, coming in for a landing, nosed over when its front wheel collapsed. The giant plane skidded 900 feet to a stop half way down the runway. No one was hurt.

The second Globemaster, winging south on the 2,250-mile hop from New Zealand, was already over the pack ice and had passed its point of no return. The runway had to be cleared of the seventy-seven ton transport before the fuel of the arriving plane was exhausted.

A squadron of tractors came rumbling across the bay ice from the Navy camp at Hut Point, their exhausts sending up clouds of steam in the subzero air. The midnight sun had slipped behind the 13,000-foot mass of Mount Lister, across McMurdo Sound, but its light still showed pink on the snows of Mount Erebus, behind the camp.

The tractors, including one that in itself weighed thirty-seven tons, hitched on to the landing gear of the disabled plane and began to pull. Nothing happened.

Possibly the plane had frozen to the ice of the runway.

Again and again the tractors pulled the tow cables taut and churned up the ice. At last the great plane, said to be the largest transport in operation, began to move. It was slowly hauled to the end of the runway and the tractors bulldozed a path for it to the side and out of the way.

Two hours later the inbound plane landed safely and discharged its airlift cargo. A third Globemaster had been turned back to New Zealand before it passed its point of no return.

These planes cost about $1,800,000 each. The damaged one will have to be examined before a decision can be made whether it can be repaired and flown out. First it must be brought back to an even keel to unload its cargo, includig an Otter ski plane—the third to be ferried in aboard the Globemasters.

The first task of the Navy planes based here is to find a suitable site at the foot of the mountains

ANTARCTICA OPEN TO NEW SCRUTINY

U. S. Polar Flights Disclose Possible Inland Airfields Near Seams of Coal

By WALTER SULLIVAN

McMURDO SOUND, Antarctica, Nov. 2 — The three flights made from here to the South Pole in the last week have revealed extensive snow-free areas within 350 miles of the Pole.

Ever since Sir Ernest Shackleton first climbed the Beardmore Glacier onto the Polar Plateau in 1908 it has been known that near-by mountains above 14,000 feet in elevation thrust naked crags into the sky. Capt. Robert F. Scott and Shackleton also saw snow-free mountains and talus slopes against the mountains that flank the Beardmore Glacier.

The flights over these mountains have disclosed what would be a geologist's paradise if a geologist could be landed there. Some of the barren plateaus and valleys where there is no snow or ice are many square miles in area.

The ice sheet covering the Antarctic Continent is believed to have shrunk until its surface is about 1,000 feet lower than it was at its maximum. This has laid bare some valleys and plateaus strewn with the morainic debris left by the flowing ice.

At least two of the large bare areas sighted on the Polar flights of the past are believed to afford potential airfield sites. One is on Plunket Point at the junction between Mill and Beardmore Glaciers on the eastern side of Beardmore. The other is on the northeast side of Mill Glacier about midway up its course from the Polar Plateau.

Capt. William M. Hawkes of Jersey City, N. J., air adviser to the United States Navy expedition that is operating in Antarctica, believes it may be possible at either place to level out a gravel runway for year-around use by small aircraft.

According to the records available here only ten flights had been made prior to this season across the 700-mile belt of mountain ranges that straddles the route to the Pole. The sector in question begins at Shackleton Inlet on the west side of the Ross Sea and extends eastward to the point where this mountain system vanishes into the unknown.

Each new flight enlarges the information about this region and makes more evident the complexity of its geography. Many more mapping flights will be necessary before its tangle of canyon, gorges, ridges, escarpments, and snaking glaciers can be unravelled and charted.

BARE POLAR REGIONS: Areas free of ice and snow have been sighted at Plunket Point (1) and near the Mill Glacier (2).

Once that has been done there may be found even more promising airfield sites than those sighted by planes from this base in recent days.

The examination of these areas by explorers on the ground may solve some of the riddles of Antarctica. To date five parties of explorers have penetrated these mountains on foot and all but one of them found low-grade coal. Both Shackleton and Scott found it on their marches up the Beardmore Glacier, with fossil imprints of leaves that spoke eloquently of the forests that once grew there.

The members of two expeditions led by Rear Admiral Richard E. Byrd found coal seams farther east. One party, led by Dr. Laurence Gould, found such deposits on Mount Fridtjof Nansen, just south of the refueling depot that has been established by this expedition.

Another party, under Quinn Blackburn, found coal and remains of what appeared to be a petrified forest at Mount Weaver in the Queen Maud R summit of Scott Glacier. Only Roald Amundsen failed to find coal on his passage through these mountains.

The geologic fragments provide only the most meager clues to the history of this mighty continent. What sort of creatures lived in those primeval forests. Did Antarctica, as Charles Darwin wondered, provide a missing link in the development of plants?

"Nothing is more extraordinary in the history of the vegetable kingdom, as it seems to me," Darwin wrote, "than the apparently very sudden or abrupt development of the higher plants. I have sometimes speculated whether there did not exist somewhere during long ages an extremely isolated continent, perhaps near the South Pole."

4 MEN AND A TENT FORM POLAR BASE

Navy Ski Plane Takes Them to Heart of Antarctica—Refueling Strip Planned

McMURDO SOUND, Antarctica, Oct. 31—Four men of the United States Navy were set down by air Monday in a desolate region close to the heart of Antarctica.

The nearest pinpoint of human habitation on their maps is Little America, more than 450 miles north. About ten miles south rise the rugged peaks of the Queen Maud mountains.

The landing of the men, three of them from New York State, with their tent and survival rations was described by Rear Admiral George F. Dufek, commander of the naval forces in Antarctica, as "the first step" toward the South Pole.

Presumably the men are now huddled in their tent as a blizzard roars outside, for a similar storm has buried this air base in driving snow.

Navy and Air Force planes are awaiting clearer weather to take four more men to the outpost and drop more supplies and 6,000 galons of aviation gasoline. The outpost will then be ready to refuel the twin-engined Navy transports due to fly over the mountains with a construction crew.

The first four men and their camping gear were flown to the site by two ski-equipped transports. Headwinds and the heavy load slowed the planes to a ground speed of barely sixty miles an hour.

It was necessary to keep at least one of the two engines on each plane running while the transports were on the snow. Hence, to conserve fuel, the plane crews could not remain to help erect the camp as they had hoped to do.

"It broke your heart to leave those guys there," said one of the pilots, Lieut. Comdr. Edward J. Frankeiwicz, of Warwick, R. I. "We just had to push them out the door with their gear and take off."

Only seventeen minutes after the plane's skis touched down the transports were airborne again after having delivered the men and two tons of equipment.

The leader of the little group left on the ice shelf at the foot of the mountains is Michael Baronick, 23 years old, of 722 Henry Street, Brooklyn. He is an aviation chief ordnance man.

With him are Ronald J. Hill, photographer's mate third class, of Avoca, N. Y.; Richard J. Prescott, builder second class, of Perry, N. Y., and John E. Zegers, radioman second class, of Davids City, Neb.

The plane's pilot said his passengers "had a little bit of that grim look of men going into combat." All were especially selected and trained for this job.

Earlier in its first venture into the interior of Antarctica this season, the Navy's expedition found what appeared to be a good runway site near the foot of Beardmore glacier.

A transport flew south in quest of a site midway between McMurdo Sound and the South Pole where an outpost could be established by air.

The plane, during a flight of twelve hours, examined the region at the foot of the mountains along a 300-mile front from Beardmore to Leverett glacier. It landed on the most promising site, one about five miles east of the point where Beardmore glacier empties into the Ross ice shell. The ice appeared free of crevasses, although the snow surface was too soft for use by wheeled aircraft. The reconnaissance plane was equipped with skis.

It had been hoped that four-engined transports on wheels could be used. Observing another likely spot, the reconnaissance plane's pilot, Lieut. Comdr. Conrad Shinn, swooped low for a closer look at the surface. Suddenly one of the plane's skis tipped down and created enough drag to cause the wing tip to strike the snow. Commander Shinn gunned the engines and the plane soared clear of danger.

Nevertheless, it was a close shave and the wing tip was slightly crumpled.

LITTLE AMERICA V, Antarctica, Nov. 17—

With the landing of twenty-four men at the South Pole in the offing, a renewed effort will be made to move 9,500 gallons of aviation gasoline needed at the refueling depot at the foot of the Queen Maud Mountains.

For almost three weeks a seven-man party, landed at the depot site by ski-plane, has been living a Spartan existence on the windswept ice sheet.

The men at the depot have until recently been living in two small tents and struggling to assemble the supplies dropped near-by from aircraft. A little tractor parachuted to them was slightdly damaged and since then they have had to drag sled loads themselves.

They now have a 16-by-24-foot hut for berthing and eating. The structure is of canvas over a wooden frame, but blizzards have threatened to blow it down.

The camp's radio antenna was carried away and its occupants isolated for a time.

Now they have assembled two 3,000-gallon rubber tanks for the gasoline and at last report a total of 2,800 gallons had been delivered to them. The rest probably will be dropped by Air Force Globemasters.

U .S. POLAR PLANE SEEKS BASE SITE

Navy Transport Craft Makes First Flight of Season to Interior of Antarctica

McMURDO SOUND, Antarctica, Oct. 25—A United States Navy plane flew south today to find an airfield site near the outlet of the Beardmore Glacier. It was following the route taken during the early part of the century by the British explorers Scott and Shackleton.

The flight was the Navy expedition's first penetration to the interior of Antarctica during this climactic season of polar activity by many nations. In all, about forty outposts are to be in operation in the Antarctic by the end of the summer that is just starting.

One of them, to be set up by the United States, is to be at the South Pole. The airfield at the foot of the Beardmore Glacier is to be a way station for planes carrying supplies on the 820-mile journey from here to the point at the bottom of the world.

Today's flight was made by a twin-engined transport plane that had been equipped with skis. Its pilot is Lieut. Comdr. Conrad Shinn of Spray, N. C.

With him are Capt. Douglas L. Cordiner of Washington, D. C., commander of the Navy air squadron taking part in the operation, and Capt. William Hawkes of Jersey City, air adviser to the expedition.

Their task is a difficult one, for they must find an area of ice that is hard enough to carry four-engine transports on wheels. At the same time, they must be free from crevasses. The plan is to ferry supplies of aircraft fuel, plus dogteams, food and station huts to the airfield site by four-engined Douglas transports that are not equipped with skis.

The Beardmore station is to be commanded by Lieut. (j. g.) Noel D. Eichhorn of Williston Park, L. I. It will lie slightly short of the mid-point between McMurdo Sound and the pole.

Its function, in addition to providing rescue facilities, will be to enable the twin-engined transports landing men, dogs and supplies at the pole to refuel both coming and going. These planes, laden with bulky survival gear, would otherwise be unable to carry much of a payload.

With an opportunity to refuel at the foot of the Beardmore Glacier they also will be able to take off from the polar plateau with a relatively light fuel load.

One of the chief problems of the operation is to get the planes back into the air once they have landed on the 10,000-foot plateau. This is because of the rarified air at that elevation.

Big Planes' Hops to Antarctica Almost Double Exploring Season

Globemasters Soar Over Pack Ice, Not Passable to Ships for Another 2 or 3 Months, With Men and Supplies

McMURDO SOUND, Antarctica, Oct. 21—Forty-four Americans flew into Antarctica today in a plane also carrying almost fourteen tons of cargo. The flight from New Zealand took less than twelve hours.

The plane flew for hours across pack ice that probably will be impenetrable to cargo ships for another two or three months. Thus the flight symbolized the revolution in Antarctic exploration. The capability of the largest transports to fly men and supplies to Antarctica long before ships can get through virtually doubles the season of full activity.

In the past, only those who wintered on the darkened continent could strike into the field much before midsummer.

Before dawn two buses carried the United States party to Harewood Field, outside Christchurch, New Zealand. The men shouldered their duffle, and in single file moved up the lowered ramp into the cavernous clamshell nose of an Air Force Globemaster.

The cargo compartment looked like the hold of a freighter. There were stacks of oxygen bottles, piles of long crates containing spare aircraft propellers and many other items.

A small group of friendly New Zealanders waved as the big plane taxied away for its takeoff.

Another Globemaster had just reached McMurdo Sound, the first plane of such size to land on the Antarctic ice. Others stood ready at Harewood to continue the airlift at four-hour intervals.

The pack, rarely seen from the air this early in the season, was a fascinating place. No icebergs were to be seen, but seals lay on the drifting floes. Presumably they were crab eaters, said to be the most populous of all seals and walruses, and yet one of the least known of the mammals.

Somewhere in the pack these creatures are believed to congregate for their brief breeding season, but no one has ever seen such an assemblage. It will probably be discovered only through such flights as those made today.

At length the men in the plane could see the snow-clad peaks of Victoria Land and the great glaciers that twist between them into the Ross Sea. The air over McMurdo Sound was cloudless, affording a clear view of the mighty mountains that have humbled explorers since Scott first set his base there in 1902.

Only a small cloud of steam hovered over the volcanic cone of Mount Erebus.

The plane circled the area near Hut Point where, after 100,000 man-hours of effort, the American wintering party had smoothed and hardened an ice runway.

Those in the plane saw the orange tail of a Neptune patrol bomber protruding from the snow near-by. Other wreckage was scattered over a distance of 500 yards.

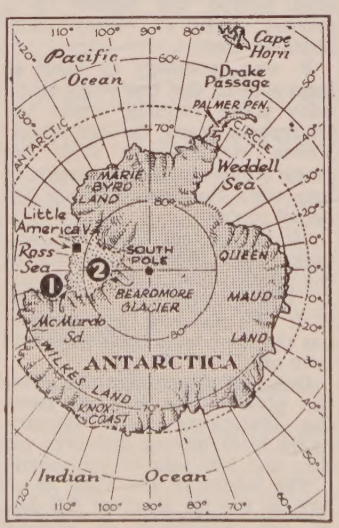
The plane crashed Thursday while maneuvering to land in poor visibility. Three men were killed instantly and another has died subsequently. Three others of the injured were en route to New Zealand aboard the first Globemaster by the time this correspondent's plane arrived. One other casualty is still here, and his condition improved for the first time today.

The Globemaster, built by the Douglas Aircraft Company and known also as a C-124, landed on the ice. As soon as the wheels were firmly on the runway the pilot reversed the pitch of the propellers and raced the engines. This brought the plane to a halt after using only a fraction of the runway.

Rear Admiral George J. Dufek, commander of the forces taking part in the Antarctic program, was standing in the snow to greet the new arrivals. Among the latter was Dr. Paul Siple, who is to command the outpost to be set up at the South Pole.

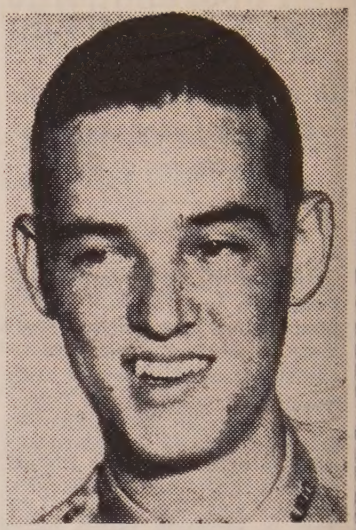
As soon as the Globemaster opened its nose and its belly hatch, tractors and other vehicles bustled about, preparing to haul the cargo to the base. The men at the controls, who in many cases wore beards, were delighted to see new faces after the long polar night.

Altogether ninety-three men spent the winter that has just ended at McMurdo Sound. Seventy-three others spent the winter at Little America V.



BASE SITE IS SOUGHT: A party flew from McMurdo Sound (1) to the Beardmore Glacier outlet (2) to find a location for an airfield.

Antarctic Calls Flier, 18, So Schooling Can Wait



ROBERT BARGER

PEORIA, Ill. Sept. 8—Bradley University will have to wait for Robert N. Barger 3d. He is going to spend the winter in the Antarctic.

Mr. Barger, 18 years old, was chosen by the Air Force this week to be the one Civil Air Patrol cadet from the United States to accompany an aviation unit that will spend six months in the Antarctic, beginning Oct. 1.

He was introduced to the military life this week on a preliminary visit to Great Lakes Naval Training Station, then went on to Santa Monica, Calif., to attend a photographer's training course.

As a "working member of the team" to be sent by the Eighteenth Air Force, he will work as an assistant photographer. When he was graduated from high school last spring, he won a scholarship to Bradley University here.

OVER THE SOUTH POLE, Oct. 26 (Delayed) (AP).—The youngest passenger on the Globemaster was Robert Barger, a 17-year-old Civil Air Patrol cadet from Peoria, Ill.,

FUEL-DROP MADE OVER SOUTH POLE

U. S. Plane Delivers the First Supplies for New American Outpost in Antarctica

By WALTER SULLIVAN

IN FLIGHT OVER ANTARCTICA, Oct. 26—This Air Force C-124 Globemaster has just dropped five tons of fuel and a "grasshopper" over the United States outpost at the South Pole.

A "grasshopper" looks like a rocket. It is about two feet in diameter and six feet long. When it has parachuted to the ground it settles down for a brief period, then "comes to life." Driven by compressed air, its "legs" shoot out in such a manner that it gets to its "feet" and a radio antenna thrusts upward.

It then begins transmitting weather reports from the isolated area in which it has been dropped. Ours was set to start "talking" an hour and a half after it had landed.

The better part of an hour was spent flying in a circle around the South Pole.

It was the first time an Air Force plane had flown over the bottom of the world, and also the first time the vicinity of the pole had been seen this early in the season.

The pilot was Maj. Gen. Chester McCarty of the Air Force Reserve. He commands the Eighteenth Air Force, which specializes in airlifts and has been assigned the task of dropping the bulk of the supplies for the projected base at the pole.

When the area was reached the forty-three men in the plane were told to strap themselves in their seats, except for those who were to conduct the drop.

One of them held up his fingers to denote the final seconds before the release. Then a platform containing eighteen oil drums dropped out of the floor of the plane. A glaring light reflected from the polar plateau flooded the interior of the plane and a whirlwind of frigid air swept loose bits of paper into flight.

Alongside the white cavity in the floor two airmen struggled frantically to haul in the great canvas envelopes that had contained the three parachutes hitched to the load. They fought against the wind-drag on the envelopes and against the danger of falling out of the plane.

Once the envelope had been recovered the plane circled and the "grasshopper" was pushed out. Then the plane started its 830-mile flight back to McMurdo Sound — the nearest haven of safety.

We took off from a cleared strip of ice on the frozen-over waters of McMurdo Sound at 2:12 A. M. Greenwich time (9:12 New York time). The sky was completely free of clouds and there was so little haze that mountains fifteen miles away were clearly visible.

However, as the plane proceeded south over the Ross Ice Shelf at 5,000 feet, an undercast of haze appeared ahead. General McCarty went up to 8,000 feet in an effort to "get on top."

The plane was still in the haze with uncharted mountains ahead that rose to over 15,000 feet. He climbed to 12,000 feet, and finally to 16,500. For several hours the plane flew at this altitude although the fuselage was not pressurized.

Oxygen bottles were passed from hand to hand but many of the passengers were feeling the effects of anoxia—shortage of oxygen. Capt. William Hawkes, Navy air adviser to the expedition, tossed a note down from the upper deck of the fuselage to a friend below since shouting was impossible because of the noise of the aircraft.

"Better a headache than a broken neck," it said.

Although there were layers of clouds below and above the plane, most of the way south, and at the pole itself, the sky was clear and the surface below was visible.

From 1,800 feet aloft the sastrugi—wind-molded furrows in the surface—were very prominent. General McCarty thought they might be eighteen inches high, but the elevation of the sun at the pole now is only twelve and a half degrees above the horizon, which tends to throw the sastrugi into strong relief.

We climbed to the polar plateau over the Shackleton Glacier, then picked our way down behind the mountains that form the western wall of the Beardmore Glacier.

The bases are being set up by the Navy with help from the Army and the Air Force.

16,000-Mile Polar Flight Is Routine for AF General

CHRISTCHURCH, New Zealand, Oct. 29 (AP).—A month ago Maj. Gen. Chester E. CcCarty, commander of the United States 18th Air Force, was flying over the North Pole.

About 7 p.m. last Thursday he left Christchurch in a Globemaster plane for the Antartic.

About 7 p.m. Friday, he was flying over the South Pole.

Aobtu 7 p.m. Saturday he was finishing dinner here after enjoying a round of golf on a Christchurch course.

About 7 p.m. yesterday he was back from a fishing expedition at Hanmer Springs, 80 miles from this city.

In the 43 hours the Globemaster was away from Christchurch, all but 10 hours were spent in the air. Gen. McCarty, of Greenville, S. C., had flown 16,000 nautical miles.

Gen. McCarty spent 67 minutes flying back and forth over the pole. He fixed its elevation at 10,350 feet—400 feet higher than Capt. Robert F. Scott's estimate of 1912.

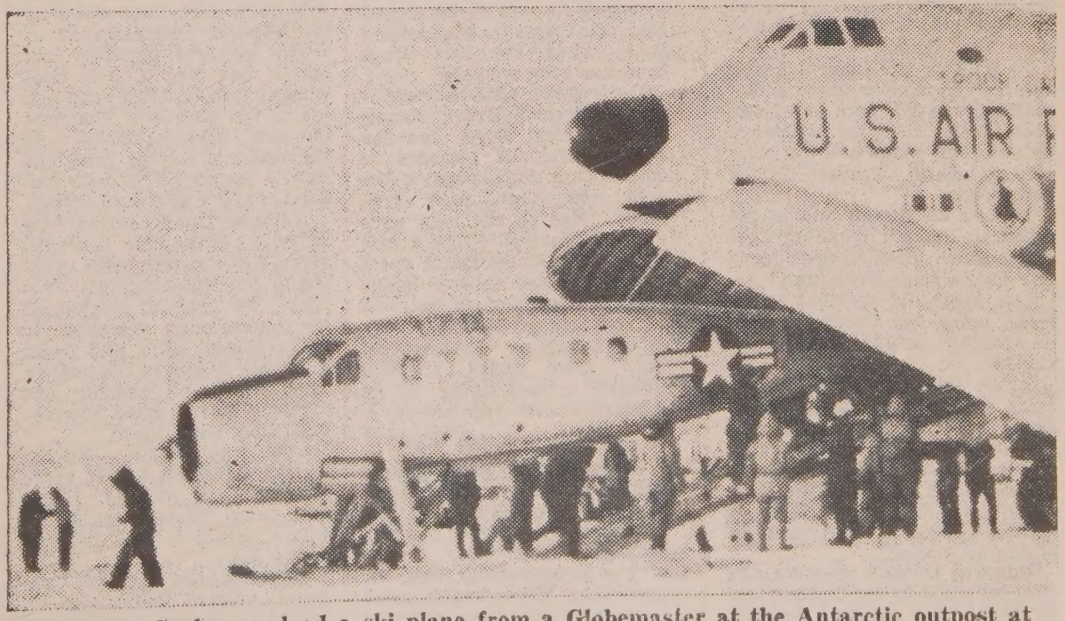
Gen. McCarty dropped five tons of fuel oil for a party to winter at the pole.

He talked by radiotelephone from inside the Antarctic to an American base deep in the Arctic Circle on Ellemere Island; to his wife at their home in Greenville, and to Gen. Otto P. Weyland, commander of the Tactical Air Force at Langley Field, Va.

Traveling to the pole, Gen. McCarty stopped off at McMurdo Sound, the American base on the Ross Sea, "for a bite to eat."

Gen. McCarty, who flew at 1,500 feet in clear weather over the pole, said the snow was packed so hard he doubted it would be safe for a parachute jump. Ridges formed by the wind definitely precluded wheeled aircraft, he said, but ski-equipped Dakotas should be able to land.

MAJ. GEN. McCARTY



U. S. Navy Seabees unload a ski plane from a Globemaster at the Antarctic outpost at McMurdo Sound.

ANTARCTIC FLIGHT LANDS 7 AT POLE

Navy Party First to Reach It Since Scott in 1912—Dufek Leads Expedition

By WALTER SULLIVAN

IN FLIGHT OVER SOUTH POLE, Oct. 31—Read Admiral George J. Dufek landed at the South Pole today, 8:30 A. M. Greenwich Time in ski equipped twin engined Douglas transport plane and raised the Stars and Stripes over the bottom of the world.

It was the first time men had set foot at the pole since Capt. Robert Falcon Scott and his ill-fated party did so in January, 1912. Captain Scott and his companions all died on the return trek.

Admiral Dufek's plane was piloted by Lieut. Comdr. Conrad Shinn of Spray, N. C.; Capt. William Hawkes of Jersey City, N. J., as copilot both are veterans of the huge Navy expedition that explored much of Antarctica in 1947-48.

The navigator was Lieut. John Swaden of Elkhart, others in the crew were John P. Strider, aviation mechanic, 2/c of Kearneysville, W. Va., and William A. Cumbie Jr., aviation electronics technician 2/c, of Milton Fla. On board in addition to Admiral Dufek was Capt. Douglas L. Cordiner of Washington, D. C., who is in command of air activities at the McMurdo Sound airfield from which the flights to the pole are being made.

Admiral Dufek carried a small American flag which he raised over the pole when he debarked from the plane.

At 9:30 A. M. Admiral Dufek, and his companions made a successful take-off with a strong boost from their jet assistance bottles. This plane and the companion plane turned toward home base.

It took all fifteen jets to get Admiral Dufek's plane off the rough snow. Then oil pressure in one engine sank alarmingly.

Our plane, its survival equipment ready for dropping, flew a snaking course behind the cripple.

After two hours the mountains at the edge of the South Polar Plateau appeared and Admiral Dufek's aircraft threaded its way down the glacier to the refueling camp on the Ross Shelf Ice. It swept in for a landing and we continued to McMurdo Sound.

Admiral Dufek's was not the first airplane to fly to the Pole. In 1929 Rear Admiral Richard E. Byrd flew over it. Several other flights have been made

Antarctic Commuter

Rear Admiral George J. Dufek

FOR the last century and a quarter, Antarctica, the least known 6,000,000 square miles on earth, has enjoyed a fabulously successful career of giving science the cold shoulder.

However, Antarctica's isolation is about to end, and one of the men behind this is Rear Admiral George J. Dufek. Admiral Dufek, a genial but determined man, landed yesterday at the South Pole. At 53 years of age, the career naval officer is in charge of United States forces participating in the Antarctic phase of the International Geophysical Year. This is an effort by nations to study the earth and its environment.

Man in the News

Eleven nations are joining in a program to carry out the most intensive scientific examination of Antarctica since it was discovered in 1820.

Career of Versatility

The Admiral, a 1925 graduate of the Naval Academy, has been a submariner, aviator and skipper of fighting ships. In recent years he has become a sort of commuter to the Antarctic, this year's visit being his fourth.

Last year he headed Operation Deepfreeze I. His apprenticeship in Polar exploits was served in the Navy's Antarctic Development Project of 1939-1941 under Rear Admiral Richard E. Byrd. Admiral Byrd, a veteran of five trips, is in overall charge of the United States operations this year.

Admiral Dufek was back in the Antarctic with the Navy's Operation Highjump, 1946-47. While commanding the Eastern group, he fell into the sea twice—once, when a helicopter in which he was flying nosed into the water; the second time, when the line of a breeches buoy snapped.

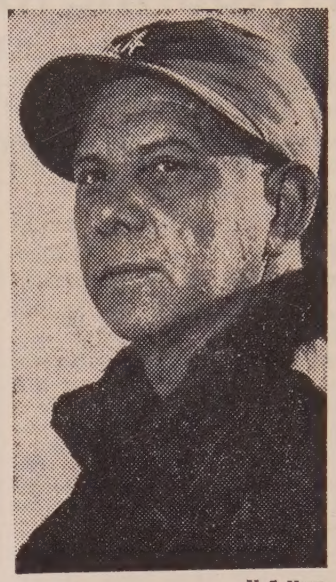
During the 1955-56 expedition, Admiral Dufek, along with Admiral Byrd, had the perhaps dubious pleasure of introducing Antarctica to the 1,800 men aboard their seven ships. Not all the men were exactly grateful. "It's a nice place to visit, all right, but I wouldn't want to live here," became the standard jest.

One officer described Admiral Dufek as "a human being," then added bravely: "That's a rare thing in an Admiral's suit you know."

No Explorer, He Says

Although Admiral Dufek has helped strip some of the topographical mystery from the continent, he does not describe himself as an explorer.

"I'm an operations man," he once said. "You might say I push ships and planes and men around, but I am not an explorer. Armiral Byrd is an explorer. He is Mr. Antarctica. Me, I'm an operator."



U. S. Navy

"I'm an operations man"

In carrying out his assignments in a treacherous corner of the world where even the simplest operation isn't easy, Admiral Dufek believes in delegating responsibility.

"I'll give a man a job and then it's his job to do," he said, adding with a grin, "All I do is just stand by and sweat."

The Admiral and the Chief

Enlisted men like to tell the story about the Admiral and the Chief Petty Officer. The chief, so it goes, had had an extra drink or two to celebrate his ship's return from four months in Antarctica. When he arrived back aboard at 2.30 A. M. he went to the Admiral's cabin and woke up the Admiral. Just like that.

The Admiral patiently got out of bed, had a little chat with the chief, then sent him off to his quarters. The next morning, Admiral Dufek told his officers not to prod the chief's memory. "It will embarrass him," said the Admiral.

Admiral Dufek knows how to relax. When, for example, seven Navy airmen were missing in the Antarctic last February, the Admiral overhauled his operational schedule to make planes, ships and pilots available to join in the search. Then he began reading one mystery novel after another until they were found.

Like any sailor, Admiral Dufek is restless to get home after a long journey. Home now is in Washington, D. C. where he has a wife and two young sons.

By a special Act of Congress, Admiral Dufek was retained on active duty beyond his retirement date of June 30, 1955.

SOUTH POLE COLD DELAYS U. S. BASE

58 Below Is Too Bitter to Do Outport Job, Dufek Finds —Antarctic Spring Tardy

McMURDO SOUND, Antarctica, Nov. 1—The temperature of 58 below zero Fahrenheit experienced by the American party that landed at the South Pole yesterday was so low that the erection of a station there is being postponed.

Rear Admiral George J. Dufek, commander of the United States naval forces whose task it now is to set up scientific outposts at the Pole elsewhere in Antartica, said after his return from the Pole that the expedition would not land a construction camp crew at the Pole until the weather warmed up to some extent.

The expedition's meteorologist, Comdr. John Mirabito, believes that there may be a substantial increase of the temperatures at the Pole by the last of this month.

Commander Mirabito cited weather records from Little America on the easterly edge of this Ross Sea sector of Antarctica, where a rise of 30 degrees in the mean temperature for November, the middle month of the South Polar spring, has been recorded. Little America has been the main base of Rear Admiral Richard E. Byrd,

Until seven Navy men landed at the Pole by plane yesterday, no one had ever been there this early in the season. The extreme cold was a surprise and disappointment to the expedition and its leader.

Men acclimatized to polar weather can work in very low temperatures on the coast. But the South Pole is on a plateau 10,000 feet above sea level and the air there is so thin that men must breathe deeply and often, which in extreme cold can damage the throat.

OVER THE SOUTH POLE, Oct. 31 (AP)—

Circling overhead in a Globemaster escort plane, reporters saw Admiral Dufek step out in his fur-hooded parka, walk away from the plane's slipstream and plant the United States flag in the snow.

Before the C-47 took off with a blaze of fire from fifteen jet-assist take-off bottles and a long plume of windblown snow, the party had stayed on the snow at the bottom of the world for an hour making observations.

In the 58-degrees-below-zero temperature vapor trails from the plane's engines traced a madman's painting in the still air of the Polar plateau.

NEW VICTORY SEEN OVER ANTARCTICA

U.S.S. Glacier's Feat Said to Show Ross Sea Can Be Entered Any Time

McMURDO SOUND, Antarctica, Oct. 29—The arrival here of the U. S. S. Glacier has shown that ships with the icebreaking capabilities of that vessel can penetrate the Ross Sea at any time of the year.

This is the opinion of Rear Admiral George J. Dufek, commander of the naval forces that are supporting the United States program in Antarctica, and members of his staff.

The Glacier reached the McMurdo Sound after butting her way through 850 miles of pack ice in eight days. So far as is known here, the earliest previous penetration was Dec. 7, well into Antarctic summer. It was achieved by the Japanese ship Kainan Maru, which in 1912 encountered almost no ice.

After her stop here, the Glacier will cross the Ross Sea eastward and visit the region of the other main United States base, Little America V.

The feat of the Glacier was due in large measure to her 23,000 horsepower. She is by far the most powerful icebreaker in the United States Navy.

Comdr. Charles L. Browning of McLean, Va., who sailed her as a member of Admiral Dufek's staff, doubts that any of the other icebreakers could have made it without extensive delays.

The worst area was off Inexpressible Island in Terra Nova Bay, on the western side of Ross Sea.

Admiral Dufek felt that the pack off there would be no heavier in midwinter. In fact, he suggested it might be easier to penetrate at that time, when the Ross Sea was freshly frozen over.

Subsequently, spring storms broke the ice and caused sufficient turmoil in the pack to create extreme pressure ridges. Most of the ice was only 5.6 feet thick, but these ridges rose as high as 12 feet above the surface, making the ice extremely hard to break.

A heavy cushion of snow formed over the floes above the bows of the icebreaker, Commander Browning said, and made them even harder to break.

The ship's last port of call was Valparaiso, Chile. She sailed from there Oct. 5. The pack was found to extend 200 miles north of Scott Island, which lies on the international dateline and is the traditional point of entry into Antarctic waters.

The penguin in the foreground, was a casual observer of activities around the ice-breaking ship, The Glacier, for "Operation Deepfreeze". In the background is the Antarctic volcano Mount Erebus.

APPLES BIG NEWS IN LITTLE AMERICA

Arrival of the First Fruit of Season Near Outpost Makes Mouths Water

LITTLE AMERICA, Antarctica, Nov. 8—Crisp, round, rosy and enticing, an exhibit hangs on the wall of the mess hall at this lonely outpost that makes the mouths of all who behold it water. It bears a label reading, "this is an apple."

In this manner the camp cook has announced the arrival of the first fresh fruit of the new season on the Navy icebreaker Glacier, which has reached Kainan Bay a few miles to the north. She is the first ship to arrive here since the winter night set in.

The icebreaker is low on fresh food after her long voyage from Valparaiso, Chile, and her struggle to pierce pack ice. Nevertheless she parted with some of her precious reserves for the seventy-three men who wintered here. Apart from mail and women friends nothing has been missed more than fresh fruit by the men at this camp.

Dr. James H. Scriber of Framingham, Mass., the newly arrived dentist was somewhat unnerved by the stampede of "welcomers" that rushed him as he prepared to debark from the plane on landing here a few days ago. He was bewildered for a moment until the men leaped into the plane and seized the mail bags at his feet.

"I have never seen anything like it," he said. "They scrambled for those bags like ravenous dogs."

It had been thirty-three weeks since the last incoming mail but the morale of the Little Americans had been kept high by another link with home—their ham radio station.

During the long dark winter in the snow-buried camp every man had a chance to chat with his family or some young woman.

Both this base and that at McMurdo Sound 500 miles to the west were provided with a one-kilowatt transmitter for use on amateur radio bands. Almost every evening Little America has made contact with radio amateurs in various parts of the United States.

Those worked most frequently were Paul P. Blum who operates W2KCR in Syracuse, N. Y., and Newton Kraus, whose call sign in Warren, R. I., is W1BCR. Mr. Kraus placed phone calls to the designated homes and then through a "phone patch" enabled the Little Ameriacns to talk directly with their families. This proved wonderfully effective in sweeping away the 10,000 miles that separate the men from home.

The Glacier left today for New Zealand to escort supply ships here.

AUCKLAND, N. Z., Nov. 17 (AP).—An iceberg sixty-seven miles long was in the path of the U. S. Icebreaker Glacier when it returned from Little America to New Zealand. The Glacier's crew said the iceberg was more a help than a hazard because it cut through the icepack to make a northward path for the icebreaker.

Visit to Byrd's Old Base

ABOARD U. S. S. GLACIER, in the Bay of Whales, Nov. 6—One of the toughest flags ever made is still flying over Rear Admiral Richard E. Byrd's original camp at Little America.

Despite the howling gales and blizzards of the Antarctic winter just ended, this ship found the Stars and Stripes, which it left here last summer, still intact. The camp, from which Admiral Byrd made the first flight over the South Pole in 1929, is threatened by an immense crack, which separates it from the main ice sheet to the south. The camp was built in 1929 on the floating Ross Shelf ice, about 700 feet thick, but sections of the shelf periodically break loose and go to sea as icebergs. If as appears likely, the crack grows, the first Byrd camp and the one superimposed on the first in 1934 will float north.

This bay was ruled out as an exploration base in 1955, when it was found that a section of the shelf as large as Long Island had broken out. The harbor, long used by Antarctic expeditions, had vanished and the base set up by the United States Navy expedition in 1947 was cut in two and all nine of its planes lost.

This icebreaker tried in vain today to find the remaining part of that camp. Deep indentations in the shelf indicated that further ice had broken out, but the sea smoke, a form of fog, obscured part of the frontal ice cliffs and made thorough examination impossible.

Comdr. Bernard J. Lauff of Milan, Mich., now skipper of the ship, flew by helicopter to the camp used by Admiral Byrd's first two parties. Commander Lauff also found the camp built five miles to the north in 1940 with its cluser of radio antenna poles protruding from the snow. They were plainly visible from the ship

Snow levels at these camps seemed roughly the same as two years ago. The winds pouring over the edge of the Ross Shelf ice seem to prevent any large accumulation. One of the seventy-five foot radio towers erected at the camp twenty-eight years ago was completely buried.

Ronne Gets New Antarctic Task To Set Up Weddell Sea Outpost

Capt. Finn Ronne will command a United States polar base to be established at Bowman Peninsula or Gardner Inlet (1). Gould Bay (2) is being considered as an alternate site.

By WALTER SULLIVAN

WASHINGTON, July 6—Capt. Finn Ronne was named today to command the Antarctic outpost the United States hopes to place late this year in the southwest corner of the Weddell Sea.

It will be Captain Ronne's first visit to Antarctica since he led a 1947-48 expedition to the sector of Palmer Peninsula, below South America and on the west side of Weddell Sea. The expedition discovered and named Edith Ronne Land south of Weddell Sea.

Captain Ronne hopes that his base can be placed on Bowman Peninsula or Gardner Inlet; but no ship, of here own volition, has come within several hundred miles of this area. The 1947-48 Ronne explorations were made by air.

An alternative and more accessible location for the base would be at Larry Gould Bay, discovered by Captain Ronne 380 miles to the southeast.

The Weddell Sea station is one of six Antarctic outpost planned by the United States for the International Geophysical year 1957-58, the coordinated worldwide scientific observations to begin next July. Rear Admiral Richard E. Byrd is officer in charge of the United States program with Rear Admiral George J. Dufek commanding the Naval support forces.

Captain Ronne has frequently associated with Admiral Byrd's Antarctic ventures. Finn Ronne's father, Martin, served both with Capt. Ronald Amundsen and Admiral Byrd and Finn first went to Little America with Admiral Byrd in 1933.

In 1940-41 Finn Ronne made a 1,200-mile sledging trip that proved the insularity of Alexander I. Island. This was of special importance since the Soviet claim to a share in the Antarctic pie is largely based on Russian observation that erroneously made the area a "land." Finn Ronne showed that what the Russians had discovered was not part of the mainland.

The naval unit that will carry the forty-one members of Captain Ronne's party into the Weddell Sea is to consist of the attack cargo ship Wyandot and an icebreaker—either the Atka or the Staten Island.

The Atka made a shallow penetration of the Weddell Sea in 1955. The Navy unit will be headed by Comdr. Edwin A. McDonald, who was skipper of the icebreaker Burton Island on the 1948 Navy expedition to Antarctica.

Two long triangular tractor journeys are planned from the Weddell Sea base. The region south of this sea is unexplored although it has been seen in a few places from the air. It is hoped that one of the tractor parties will meet a similar group operating from Byrd Station at Long. 120 degree W., Lat. 80 degrees S.

Seismic soundings of the Antarctic ice cap to be made by these groups should provide a profile of the continental rocks underneath. As in oil prospecting, these soundings will be made by recording thee choes from a series of explosions.

Finn Ronne returned to active duty today as a captain in the United States Naval Reserve. He is also to head the ten scientists at the Weddell Sea station.

On his flights in December, 1947, the then Commander Ronne observed open water along the southern coast of the Weddell Sea. He hopes now that, if he can get in there early enough in the coming Antarctic summer, he may be able to follow the traditional route down the east coast of the sea and then along the southern coast to Gardner Inlet.

This inlet, covered with shelf ice, is reported by Captain Ronne to be an excellent airfield site. It lies 450 miles northwest of the projected site of an Argentine station on the Filchner Shelf Ice and 540 miles south of Stonington Island, off the west coast of Palmer Peninsula, the nearest station in the other direction.

Gravity Scrutinized By U.S. Expedition

By Lt. Col Herbert B. Nichols
The Christian Science Monitor

With Weddell Sea Group

Everybody knows the earth is round and gravity makes an apple fall or the smallest feather blown from a sparrow's breast finally reach the ground.

Why such gravity? Or at any rate, why go to the Antarctic to study it?

This is one of the many questions about this expedition's scientific job that are being answered in briefing sessions as the Weddell Sea Group's task force steams south

Dr. Edward C. Thiel, in charge of the gravity program for the IGY in the Weddell Sea area, explains that gravity varies considerably over the face of the earth, that our planet is not perfectly round to begin with, but is an oblate sphere with flattened areas at both poles and that mountains, large ore deposits, differences in elevation, large lava fields and many other factors increase or lessen the earth's force of gravity from place to place.

A large mountain on a small island, for example, can influence a plumb bob to such an extent that theodolites and transits used in mapping will give inaccurate results.

Considerable work has already been done in the Arctic to obtain accurate gravity measurements and gain a truer picture of earth's gravimetric field, hence the IGY program is considered an unusual opportunity for extending that knowledge to the Antarctic.

Two instruments capable of extremely delicate measurements are aboard the expedition's cargo ship, Wyandotte, and will enable the scientific groups aboard to make pendulum studies of surface gravity, underwater gravity, earth tide, and other measurements.

In addition to its applications in mapping activities throughout the world, such data are of value in many fields of science and for such practical applications as the location of valuable deposits of minerals and metals, and underground water supplies. Coupled with seismic studies in the Antarctic the gravity work will lead to a much better understanding of the earth's crustal structure.

The effects of moon and sun upon ocean waters, causing tides, are fairly well known, but it was only a few years ago that geophysicists established there are tides in earth's land areas as well. With his instruments Dr. Thiel expects to detect land tides at the head of the Weddell Sea measuring up to 12 inches. On the other hand, this effect may be too small to measure. It is greatest at the equator, less at the poles.

Not only will he be taking measurements at each port of call on the way to and from the Bowman Peninsula, but as trail parties go out during the next Antarctic spring (October, 1957) measurements will be made every few days. Capt. Finn Ronne, who will be in command of the Weddell Sea Station when built, and act as station scientific leader as well, hopes the sledging parties will be able to penetrate some 1,200 miles from the Filchner Ice Shelf, deep into the particularly unexplored Edith Ronne Land, discovered by him and named for his wife in 1947.

Killer Whales Are Dolphins

Killer whales, among the fiercest of all sea creatures, actually are dolphins. They hunt in packs, swallowing small seals and porpoises whole. Although these bloodthirsty marauders grow to only thirty feet, they will attack and kill large whales.

Expedition to Study Sky Radio 'Mirror'

By Lt. Col. Herbert B. Nichols
The Christian Science Monitor
With Weddell Sea Group

Nature's electric "blanket"—in existence long before mankind invented one—is about to undergo worldwide examination during the International Geophysical Year of 1957-58.

This blanket is the layer of ionized or electrically charged particles making up the "D," "E," and "F" layers of earth's ionosphere, also known collectively as the Kennelly-Heaviside Layer.

Without it, long-distance radio reception would be impossible and our present worldwide system of radio communications, would be worthless. For this area in our upper atmosphere acts like a radio mirror, reflecting back to earth certain radio waves that otherwise would continue on out into space and be lost.

It has been fairly well established that these blankets of tiny particles become ionized, or electrically charged, through the action of sunlight and of the ultra-violet portion particularly. As one might expect, the different layers vary in their ability to act as mirrors, depending on whether it is day or night, summer, or winter, or at sunspot maximum or minimum.

More than 70 observatories throughout the world will be keeping the sun under constant watch throughout the IGY, when sunspot activity, with periodically brilliant solar flares, is expected to reach a maximum. Increased activity has already begun.

Collecting data to indicate what happens to these ionospheric reflectors, is one of the tasks assigned to physicists aboard the Wyandot, sailing for the Weddell Sea area of Antarctica under command of Admiral George Dufek.

As explained in a Wyandot wardroom talk by James Brown, physicist, experts have come to accept the fact that disruption communications and ionospheric turbulence come with increased sunspot activity, hence the solar flares are considered to be the cause of geomagnetic disturbances.

Thus far, however, the study has proven very complex, with some disturbances well defined and others a complete mystery.

During the last sunspot maximum, considerable data were gathered on what happens to the ionosphere in the north polar region. From this work, natural scientists have been able to anticipate what may happen during the coming maximum in which considerable study is planned for Antarctic.

Six United States stations and many others at scattered points around the continent's perimeter, will keep tabs for 18 months on what happens in the ionosphere of the south polar region. According to Mr. Brown, there are 75 stations in different parts of the world that are now collecting ionospheric data.

Seventeen of these are operated by the National Bureau of Standards, which is responsible for collecting all available data and predicting ahead of time those communciations that will be best for long-distance transmission.

In addition, those little-known phenomena of peculiar "whistles, chirps, and frog-pond sounds," also attributed to upper air activities, were described by physicist Don Skidmore, another of the Wyandot scientists who will winter over somewhere along the Weddell Sea. These are thought to be reflected "harmonics" of electrical storms whose "echoes" howl down like the toot of a passing locomotive.

They are believed to originate in the opposite hemisphere from a receiving station; and to follow, more or less, the earth's invisible lines of force in traveling through space.

"Do such studies have any commercial value?" one of the naval officers of the task ship supporting the expedition asked. "Not directly," Mr. Skidmore answered.

"We don't know enough about such phenomena yet. However, those 'whistles' are part of the static and background noise that disrupts good radio reception, and presumably if we can find out causes we can sometimes find remedies."

What a Party They Could Have

MCMURDO SOUND, Antarctica, (AP)—The 16 Americans now at the south pole could celebrate the new year 24 times in 24 hours if they could stand the pace.

All the world's 24 time meridians converge at the pole, and there are no neighbors to complain about the noise.

But the Seabees at the polar science station they have nearly completed for the International Geophysical Year station saluted the new year only once, at the same midnight all U.S. antarctic bases observe.

That came at 7 a.m. since all bases for Operation Deep Freeze are all on what the Navy calls "mike time." It's the time used in New Zealand, 17 hours ahead of New York.

Capts. Francis Michael, Edwin McDonald, and Finn Ronne—Antarctic Commanders

Antarctic Sea Tests Speeded

By Lt. Col. Herbert B. Nichols

Special Correspondent of The Christian Science Monitor

With Weddell Sea Group

The United States expedition to the Weddell Sea area in Antartica has left the tip of South America on the last leg of its journey.

This means that the days of leisurely cruising are almost over for the natural scientists on board the icebreaker Staten Island and the cargo carrier Wyandot. As the two vessels approach the Antarctic, oceanographic work on board both of them is increasing.

Thus far more than 200 casts have been made for bathythermograph (ocean temperature) readings at various depths down to sea-bottom, since the time the icebreaker left Seattle and cargo ship departed Davisville, R.I. These will continue at two-hour intervals during the day and every four hours at night, until vessels reach Bowman Peninsula where Ellsworth Station is to be established.

All oceanographic work is under Cmdr. Edgar B. Mohl assisted on the Staten Island by William Hotel, oceanographer, and on the Wyandot by Harry D. Hockett, chief quartermaster.

First station for the collection of sea-water samples as well as temperature readings and an ocean-bottom core was occupied at noon on Dec. 9 approximately 150 miles southeast of South America's tip. Five more stations will be occupied at equal intervals between there and 10 degrees west longitude.

For this work, "Nansen Bottles" are used. These are strung out upside down at intervals on a weighted line. When the bottom is reached, a tripping device rides down the wire righting and opening each bottle in turn so that, when it is reeled in, each contains a water sample from a known depth.

Ocean bottom cores are made by plunging a long, lead-weighted metal tube with a plastic inner lining as far into the mud as it will go. Cores as long as 30 feet can be made, but about three feet is the limit Commander Mohl expects to achieve.

He hopes this will penetrate not only recent deposits containing glacial debris carried northward by icebergs, but reach well into pleistocene deposits laid down during the most recent period of extensive continental glaciation.

In colder water, three feet of mud represents deposits laid down over a much longer period than similar length cores taken from warmer seas. From these cores much climatological information is expected to be obtained.

Most of the oceanographic work is being conducted from the Staten Island which is traveling at a faster speed than the Wyandot so as not to delay both ships for the full length of time the icebreaker needs on each station. The Wyandot is averaging 11 knots, its most economical speed.

At the conclusion of the mission, the ships will bring back, at least six ocean bottom cores from an area that has not been sampled before plus several hundred temperatures readings and bottles of sea water arranged in proper sequence for each station for laboratory analysis.

These will be correlated with complete fathometer records of ocean depths encountered by the two vessels and periodic ice position reports, enabling scientists to keep all this information together.

Questions, to which at least partial answers will be found through collection of the data, include: what has been the past climate in this part of the world and is the Antarctica currnetly warming up? Where do the South Atlantic and Antarctic oceans meet? Are there any evidences of submarine canyons; sea knolls rising gently from floors of abyssal plains; mid-ocean ridges; uncharted deeps?

What can be learned about the upland interior of Antarctica from the iced-rafted ocean-bottom studies? Is Antarctica's abnormally deep continental shelf caused by the tremendous weight of its continental ice load?

Weather reports are now being received from the Shackleton (British) and General Belgrano (Argentine) stations as well as from others established in Palmerland and outlying islands, and in South America. Indications are that the past Antarctic winter in the Weddell Sea area has been milder than usual and spring has arrived early. Thus the United States expedition can expect an easier task penetrating the pack ice to expected open water than it would have been the case had the winter been severe and the Anatarctic spring late.

The Weddell Sea Group of the United States Antarctic expedition, Operation Deep Freeze II, has made contact with the Antarctic ice pack.

Our course has been generally southeast and now has changed to due east. The sailing plan is to skirt the ice for another day or so, making one more stop for oceanographic data including a deep bottom core sample. Then at about longitude 25 west, we will turn southeast again until 10 degrees west is reached.

Water temperature and frequency of icebergs have indicated the proximity of pack ice, hence the order issued by Task Group Comdr. Edwin McDonald for the icebreaker to establish contact. Skies have been overcast for several days and the weather being too rough for helicopters to fly, contact was first accomplished by radar detectors on the Staten Island, followed about an hour later by visual sighting. Skirting the ice and plotting the outer limits of the pack as they travel eastward, the two ships will provide useful data for future expeditions.

According to Capt. McDonald, 10 degrees west longitude is a location where it should be possible to go due south through light pack ice and find open water before hitting heavier stuff. We will soon be able to test this information.

This has been one of those rare days in this part of the world, with scattered cumulus clouds and periods of bright sunshine and an air temperature 40 degrees that makes the weather almost balmy compared with the overcast leaden skies and freezing cold we have been having. The sea is relatively calm for a change and the surface water temperature is about 31 degrees. Icebergs of all descriptions now are so common only a few unusually shaped ones excite comment.

Ice Delays Antarctic Vessel

Aboard U.S. Staten Island

Any battle has its monotonous side as well as dangers and the United States Weddell Sea expedition is no exception. The battle against the combined forces of Antarctic cold and ice has entered upon a monotonous waiting phase.

Locked in the midst of a vast field of solid ice where pressure ridges have rafted blocks up to 25 feet thick and cemented them into impenetrable masses, the commander of the Navy's task group leading the attack on this part of the White Continent decided it would be the better part of wisdom to risk no further advance at this time but to wait for wind and weather to soften up the enemy.

It seems now we are about a week or 10 days too early to progress beyond this point, and possibly have already risked more than we should have, considering the enemy's strength. Examination of the propeller showed the tips of three blades and more than a quarter of the fourth blade of the supply ship Wyandot are gone.

According to Capt. Edwin McDonald, there is still a slim chance we may be able to reach the Bowman Peninsula to accomplish our full mission. But if it becomes necessary to expend the calculated safety factors of time and fuel in waiting, the expedition may be forced to return to Seattle for wintering-over, without achieving the original ideal mark.

Radio contact with the British relief ship bringing supplies and replacements for United Kingdom expeditions at the Halley and Shackelton stations discloses their position to be near the southern Sandwich Islands, just short of pack ice.

The Staten Island still has plenty of fuel. Indicators show expenditures of only 24 per cent thus far. We must allow for additional drain, however, if it becomes necessary to tow the Wyandot.

Dr. Koreo Kinosita, a Japanese observer aboard the Staten Island and physics professor at Gakushuin University in Tokyo was first to see and call attention to a mirage that appeared on the western horizon and eventually became very brilliant and easily apparent.

As clear as the ice around us, the mirage showed a distant scene of pressure ice in front of huge icebergs and high ice cliffs. There was no doubt about its falsity, however, for the whole picture was upside, down—an optical illusion.

Christmas celebrations aboard both ships planned for Dec. 25 will center around religious exercises, carol singing, a special holiday dinner, and appropriate souvenir gifts for everyone.

Earlier in the voyage, while on the way to this location, oceanographer William Littlewood of Washington, D.C., making the Staten Island the farthest east oceanographic station, measured ocean temperatures with thermometers strung out in regular intervals on a long drum of sound wire.

He brought up deep as well as shallow water samples for chemical analysis, also collecting some of the queerest looking forms of small sea life known. Most were shrimplike and all colors of the rainbow. Fertility of the ocean depends on the exchange of water between deeps and waters near the surface, for fish and other life in the ocean are limited by the rate at which the ocean overturns and thus fertilizes itself.

Therefore there is very great interest in deep ocean currents. No one knows yet, says the National Academy of Sciences, whether it takes 100 years or 1000 for deep water to travel from Antarctica to the Equator and back.

SEATTLE, Nov. 7

SCIENTIFIC EXPLORERS: Capt. C. W. Thomas, left, and Carl R. Eklund, discussed a catalog of Antarctic marine organisms as they told here today of plans for scientific exploration of Antarctica. Captain Thomas will command a task group to establish two scientific bases. Eklund is senior scientist for the American base nearest the South Magnetic Pole. He and 25 other men will "winter in" next year.

Scientists Leave For Antarctic

New knowledge of the earth's magnetism, of the effects and directions of sun-spot activity and the precise position of the South Magnetic Pole will be sought by a group of scientists leaving Seattle tomorrow as part of Operation Deepfreeze II.

Carl R. Eklund, senior scientist for the 14 experts who will spend the Antarctic winter at one of seven United States scientific bases at the bottom of the world, described the projects today.

Eklund, a zoologist with the Fish and Wildlife Service, Atlanta, Ga., and Capt. Charles W. Thomas of the Coast Guard, commander of the Knox Coast Task Group of the Navy's Operation Deepfreeze II., both will be undertaking special scientific projects in line with their own interests.

"But those are secondary," Eklund said today as he and Captain Thomas explained the expedition's purpose.

"Our major task is to join with the hundreds of other scientists in the Antarctic and elsewhere around the world in making simultaneous observations of the earth's physical forces and properties, as part of the International Geophysical Year activity."

The studies at the United States Knox Coast base, on the Australian side of Antarctica, will include cosmic-ray measurements, aurora and air-glow observations, and studies of geomagnetism, glaciology, ionospheric physics, seismology and meteorology.

Eklund himself hopes to conduct observations of Emperor penguins, crab-eater seals and the South Polar skua, world's most southerly bird. Captain Thomas, who holds a master's degree in marine geology, hopes to study marine protozoa, shellfish and other sea-bottom organisms for possible relations between their prevalence and the formation of bay ice.

Captain Thomas' prime responsibility, however, will be establishment of the Knox Coast base and of a joint United States-New Zealand base at Cape Adare, on the Ross Sea.

The Navy personnel will return in late February, when winter begins. The scientists and naval personnel—26 men altogether—will spend the winter in their base, buried beneath the snows, as Admiral Byrd's camps at Little America were.

The party will leave Seattle tomorrow afternoon aboard the Coast Guard icebreaker Northwind, which has Seattle for its home port. The cargo transport Arneb, and the Military Sea Transportation Service ship Greenville Victory, both at Davisville, R. I., are departing to rendezvous with the Northwind en route.

Old Logbook Strengthens U. S. Claim in Antarctic

NEW HAVEN, Conn., Nov. 29 (AP)—A 19th century sea captain's logbook has strengthened claims that United States sailors were the first to set foot on Antarctica.

Alexander O. Vietor, curator of maps in the Yale Library, came across the logbook in a New Haven book store. He said the document advances United States claims to the long-disputed section of Antarctica known in America as the Palmer Islands and by the British as Graham Island.

Besides the United States, first-landing claims have been made by Great Britain, Argentina, Chile and Russia.

The logbook was kept by Capt. John Davis of New Haven, master of the 89-foot sealing vessel Huron. The ship sailed from here in March, 1820, and joined other sealing vessels in the South Shetland Islands, off the tip of South America, in the fall of that year.

On Feb. 7, 1821, Davis recorded the Cecilia, a shallop or light open boat serving as a tender for the Huron, approached a "large body of land" and he sent a boat ashore to hunt seals.

"I think this southern land to be a continent," Davis wrote after the shallop's boat returned.

Vietor passed along his find to the late Samuel W. Boggs, geographer to the U. S. State Department. Together with the Navy, Boggs checked the Huron logbook and also examined a newly discovered logbook of the vessel Huntress, out of Nantucket, Mas.

"Mr. Boggs later made a formal recommendation to President Eisenhower that the United States should press additional claims to the Palmer peninsula area on the basis of this new evidence," Vietor said.

Vietor purchased the Huron logbook in 1952, but kept the contents secret until this year because of the State Department's interest in his discovery. Vietor presented it as a gift to the Yale Library.

Vietor said Davis' logbook was a first-hand, documentary account of the first recorded landing on the shores of Antarctica.

POLAR PARTY AT RITE

Cross Erected in Antarctic to Honor Dead Tractor Driver

LITTLE AMERICA V, Antarctica, Dec. 1—Virtually the entire population of this southernmost American community assembled to pay tribute today to one of its members who died earlier this year in an attempt to build a safe highway into Marie Byrd Land.

A simple nine-foot wooden cross was dedicated at the base airfield to Max Kiel, Navy Construction Driver 1st Class, of Joseph, Ore. He was killed March 5 when his tractor broke through a snow bridge and plunged down a hidden crevasse.

Rear Admiral George Dufek, commander of Task Force 43 which is establishing the American stations in Antarctica for the International Geophysical Year, 1957-58, told the gathering that Driver Kiel "gave his life for science and in the line of duty."

U. S. Antarctic Tractor Unit Off On Long Scouting of Byrd Land

By WALTER SULLIVAN

LITTLE AMERICA V, Antarctica, Nov. 6—After a prayer and brief ceremony, a Marie Byrd Land reconnaissance party set forth today on what may become the longest tractor journey in Antarctic history.

The eleven-man party is under Maj. Merle R. Dawson of Williamsburg, Va. It flies the flag of the United States Army Transportation Corps as well as the Stars and Stripes. Its task is to blaze a 650-mile trail to a Byrd Station in the hitherto untrod heart of Marie Byrd Land.

At 1 P. M., Major Dawson grasped the hands of Comdr. Paul Frazier of Higginsville, Mo., who is in charge of trail operations from this base, and Comdr. Herbert W. Whitney of Arlington, Mass., commander of the Antarctic stations.

There was hand-shaking all around.

Lieut. Comdr. Peter Bol of Arcadia, Calif., the camp chaplain, bowed his head. "Eternal and everlasting God," he said in part, "bless us with safety as we go out on the trail to Byrd Land. Keep our loved ones safe until we can join them."

Then with a roaring of diesel engines the tractor train began to move off across the white prairies of the Ross Shelf Ice. The temperature was 10 below Fahrenheit, and plumes of exhaust vapor rose behind.

Leading the unit was a weasel carrying a crevasse detector, which in tests of recent days has proved highly effective. It has spotted cracks in the ice sheet only a foot wide and, according to one claim even picked up a beer can. It has given a new confidence to the trail party; last year one tractor driver was lost on a trek in this same general direction when his vehicle broke through a snow bridge and plunged eighty-three feet down a crevasse.

Never have such heavy loads been moved over an Antarctic trail, and this presents new problems. Normally, snow bridges formed across crevasses by the wind can be used, but the heavy caterpillar tractors and the big sleds they have in tow, have a combined weight of ninety-two tons. This is more than can be trusted on any snow bridge.

The crevasses must be detected, the bridges blown and the chasms filled by bulldozing. This is one of the tasks of the party that has just left.

The scouting party consists of two weasels, light tracked vehicles; a Tucker Snocat towing three one-ton sleds and two small sleeping wannigans, and two heavy D-8 tractors. Each D-8 hauls two huge cargo sleds. Three sleds are laden with food, fuel and explosives.

On the fourth sled is a wannigan containing the galley and mess hall. Wannigans were devised by loggers in the North Country as mobile huts on sled runners.

The 115 tons of supplies in tow should be enough to carry the convoy 750 miles, and air drops are planned to replenish the supplies.

Commander Frazier and Major Dawson after four scouting flights last Friday and Saturday have selected a different route from that attempted by last year's abortive effort to reach the site of the proposed Byrd Station. The earlier tractor party went east to Prestrud Inlet north of the Rockefeller Mountains, then turned south for thirty miles to climb onto the Continental Plateau before turning east again toward its goal. It reached 134:10 W., 79.30 S. but the route was dangerously crevassed.

The flights Friday and Saturday were made in a twin-engined Douglas transport equipped with skis. The air reconnaissance showed that a belt of deep crevasses cleaves the ice sheet as it slips off the shoulder of the continent and becomes waterborne along the eastern edge of the Ross Shelf.

Nevertheless, Commander Frazier believes, a smooth gap has been found to the southeast. Hence the planned current route goes first to 79:28 S., 157 W. and then to 79:44 S., 151:40 W. From aerial observation that point appears to be about 1,500 feet above sea level. From there on, the party will depend on the results of another flight still to be made.

ANTARCTIC UNIT GOES ON

U. S. Trail Party Into Byrd Land Reports Progress

ON ANTARCTIC TRAIL, Nov. 9—This train of tractors and snow vehicles, seeking a safe route into Marie Byrd Land from the United States base at Little America V, was today ninety-four miles on its way southeast at Lat. 79:14 S, Long. 157:21 W.

The convoy, out of touch with the base for two days, had run into no crevasses in the continental ice cap. Its goal is a projected site for Byrd Station, still 550 miles distant.

If the trail-breaking operation is successful, other tractor trains will follow with supplies for the scientific station the Navy has undertaken to set up for the observations of the International Geophysical Year 1957-58.

ANTARCTIC PARTY FINDS CREVASSES

Chasms in Ross Ice Shelf Discovered by U. S. Team Crossing Wasteland

ON THE ANTARCTIC TRAIL, Nov. 13—A United States Army and Navy reconnaissance party met today the Antarctic hinterlands' first line of defense—a series of crevasses.

They must be crossed or bypassed if the party is to reach its goal in Marie Byrd Land, 500 miles inland from the coast.

The crevasses encountered were small but they indicated more severe cleavages in the ice sheet a few miles ahead. During the last two days members of the party have seen crevasses on distant slopes big enough to engulf the liner Queen Mary.

The operation today was carried out by two weasels, small tracked vehicles that scouted ahead while the tractor train waited. The chief objective was to set up a fuel drum nine miles in advance of the bivouac point.

This would place it near the center of what seems to be a large embayment in the shoreline where Marie Byrd Land meets the floating ice of the Ross ice shelf. The drum could serve as a reference point for aircraft seeking to find a crevasse—free route up one side of the bay.

Before setting forth, Maj. Merle R. Dawson of Williamsburg, Va., commander of the reconnaissance party, said to the assembled tractor drivers: "We should be back in five hours if we are not back in ten you had better come out with the FD-8's and everything else to look for us." FD-8's are specially modified cargo hauling tractors.

After about eight miles of crevasse-detecting weasel in the lead came to a halt and its occupants walked back to look at a patch of snow that had suddenly subsided as the vehicle passed. With one kick of a boot, the snow fell away, revealing a crevasse.

Members of the party pieced all their rope together to a total of 175 feet and, after having tied a wrench to the end, lowered it into the abyss. The wall deepened in color from near white to light blue to azure and finally vanished into the purplish depths beyond the reach of the sounding line. The crevasse must have been considerably more than 200 feet deep.

First Lieut. Philip M. Smith of Springfield, Ohio, donned crampons—long spikes fastened to boots for climbing glaciers—and was lowered into the chasm to examine the layers in the ice walls.

The Alpine rope around his waist was snubbed around Robert W. Anderson, electronics technician second class, of White City, Kan.

Except where knicked open, the crevasse was bridged with an eight-inch crust of snow so smooth that no warning hint of its presence could be seen on the surface.

However, the party lives in comparative luxury for Antarctic travelers. The day starts at 5 A. M. when reveille is held in the two sleeping wanigans. These plywood boxes are modeled after the huts on skis used by loggers in the north woods and it is from them that they derive their name.

The sleeping wanigans are just big enough for four shelf-like bunks. There is only room for one man to dress at a time and he must remain in a stooped position. After a night when the mercury has lingered near 30 degrees below zero the unheated wanigans are chilly to say the least but haste in dressing is impossible. It is only slightly easier than getting dressed inside a refrigerator.

PACK TRAIN TO SET OUT

IN MARIE BYRD LAND, Antarctica, Nov. 26—Antarctica's first "freight train" is due to set out from Little America Saturday although the track in front of it has only been partly laid.

The train will consist of six tractors hauling ten cargo sleds with a total load of 160 tons. On board will be four prefabricated buildings for Byrd Station.

When the train, known in polar jargon as a heavy swing, starts out, the destination of its dismantled community on skis will still be virgin territory. No man has yet set foot anywhere in its vicinity.

Meanwhile the reconnaissance party is continuing its task of blazing a safe trail to the designated site of Byrd Station. It has covered the first 185 miles of the distance, which is expected to be about 650 miles in all, but at present is only inching forward.

Saturday's departure of the heavy swing is predicated on the expected arrival of the trail blazers on Rockefeller Plateau the same day. This party has only about two miles to go, but it has taken a week to cover the last four miles, snaking through a maze of huge lethal crevasses.

Yesterday a twin-engined Douglas transport operating from Little America on skis flew east to examine the route that this party will have to follow once it reaches the Rockefeller Plateau. About thirty miles inland across the plateau the plane sighted a belt of cervasses straddling the route, similar to that which has brought this party almost to a halt.

DYNAMITE MAKING ANTARCTIC ROUTE

Blasting Augments a 'Copter and Courage on Way to Marie Byrd Land Site

IN MARIE BYRD LAND, Antarctica, Nov. 27 — Armed with three prerequisites, dynamite, a helicopter and courage, the men of this Army-Navy team are laying a highway across a maze of crevasses.

Their task is to mark a trail into Marie Byrd Land. It is like trying to find a safe path across the crust of a gigantic cake that was sliced before the icing was put on. Sometimes the crust caves in and they peer into blue chasms big enough to swallow a Manhattan bus.

Yet today, for the first time, one feels unqualified optimism among these men whose faces are blackening with sunburn after a week of blasting and probing. This afternoon the crevasse detector, mounted on a small tracked vehicle called a weasel, virtually completed its crossing of the seven miles of crevassed area.

Prefabricated buildings for the scientific outpost have been loaded on sleds and are to be hauled by D-8 caterpillar tractors.

The trail through crevasse fields was first laid out by helicopter. Hence an observer from the air sees the newly planted trail flags with no footprints near them.

The only clue to the origin of one of these flags is the print of four wheels alongside. A helicopter rested there briefly while some one leaned out and jabbed a warning flag into the snow.

First Lieut. Leroy S. Kenney, Marine Corps, of Corona, Calif., is the pilot of the big Sikorsky on this job. He keeps the rotors whipping hard just in case the bottom drops out from under when he puts down on the snow. Once a wheel broke through.

The plan of attack through the crevasse field was to lay a tractor highway parallel to the crevasses, which all tend to run in the same direction. This made it possible to get within 550 yards of a smooth ramp from the lower level of the "shore" of the Ross Ice Shelf to the continental plateau without cutting across the pattern. Now, because of the converging patterns of crevasses, the last few hundred yards will probably have to be laid out "across the grain."

The route sighted from the air took advantage of the widest channel between the major cracks where sagging snow bridges over the crevasses were visible from aloft; but visual observation is not trustworthy. The crevasse detector, which is receiving its first test on this journey, seems to be picking up the hidden cracks fairly regularly, although it cannot be relied upon entirely.

Charles H. Wedemeyer, construction mechanic 1/C, of Philadelphia, went down a rope, his feet armed with long spikes for ice climbing, to examine a small crack exposed by the crevasse detector. He followed the crack a few yards under the snow and found it opened out into an immense cavern under the very spot where the light-tracked vehicles had been running back and forth.

A heavy charge of explosive caved in the bridge, which proved to be forty feet thick. The crevasse thus brought to light chilled the blood of all who gazed down it. The Times Building in Times Square could not have filled it, nor shown out of the top.

The trail-blazers are setting off about 800 pounds of explosives a mile to reveal these crevasses. Over and around one such, yesterday, they set off fourteen charges, a total of 140 pounds. The crevasse detector had a bad moment a few days ago when it broke through into a crevice and had to be hauled out.

LITTLE AMERICA, V., Antarctica, Dec. 2 — The United States Army-Navy trail party laying out Antarctica's first highway has completed the most difficult known stretch of its 650-mile route into Marie Byrd Land.

The seven-mile section through the coastal crevasse fields 185 miles southeast of here was finished today and a thirty-seven-ton tractor rode over the route without mishap.

In the final stages of the battle to cross the coastal crevasse fields, which mark the descent of the continental ice cap to the Ross Shelf, two immense clefts in the ice sheet had to be bulldozed full of snow. The second and bigger cleft was forty feet wide and 160 feet deep. It took 105,000 cubic yards of snow to fill it sufficiently for a thirty-foot roadway across the gap.

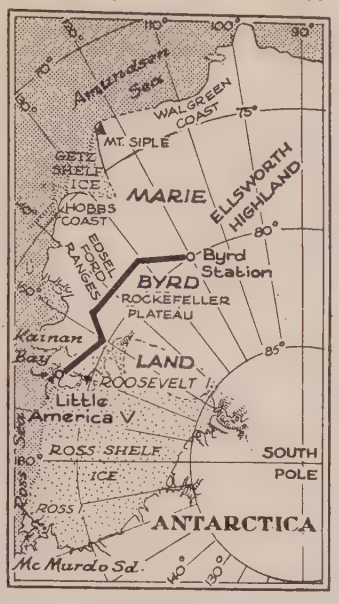
Despite the narrowness of the road at that point, the heavy tractor that packed down the snow sank in to such an extent that there were ten-foot walls on either side.

Four planes ferried supplies out to the trail men. Two were twin-engined Douglas transports and the others were single-engined de Havilland Otters.

On the way back, one of the Otters, piloted by Lieut. Wesley Seay Jr. of Florida, met a snow storm. Rather than plunge into it, Lieutenant Seay landed on the Ross Ice Shelf sixty miles from this base and waited for the weather to clear. When it did, in an hour, he flew on for another forty miles, only to encounter another snow squall.

Again he landed and waited. On his third try, he reached Little America.

U. S. Team Blazes Trail To Key Antarctic Post



McMURDO SOUND, Antarctica, Dec. 18 (AP)—Eleven United States Army and Navy men have blazed a trail 632 miles across a previously unexplored reach of the Antarctic.

Traveling by tractor and weasel and using an electronic crevasse finder, they made the trip from Little America to Marie Byrd Land in six weeks.

ANTARCTIC 'TRAIN' OFF FOR UNKNOWN

Tractor Convoy, With Mission to Set Up Byrd Station, Starts From Little America V

LITTLE AMERICA V, Antarctica, Dec. 5—Antarctica's first freight train left from here this morning for the region of Marie Byrd Land, where no man has yet set foot.

Six great tractors, the roar of speech difficult to hear, moved out from camp at a slow but steady four miles an hour. They hauled pairs of sleds laden with 160 tons of cargo.

Conspicuous in their load were panels for four Clements huts similar to those that form the buildings of Little America V and the air base at McMurdo Sound.

These structures, prefabricated in Danbury, Conn., will be the initial buildings erected at Byrd station, destination of the tractor train. With them are the Seabee builders who will put them up.

The projected route is about 650 miles long. Once their cargo has been delivered the tractors must return here for another load. This will involve at least 2,000 miles of travel on trail and will put a heavy strain on the vehicles, which have just ended a winter of hard usage here.

Chief Warrant Officer Victor Young of Wickford, R. I., who is in charge of the train, led his convoy onto the highway blazed by a reconnaissance party that has completed the first 200 miles. He rode in a small tracked vehicle known as a weasel.

At the send-off ceremony the men of the base were drawn up in ranks facing the tractor party and its vehicles. The thundering engines forced Rear Admiral George J. Dufek, commander of the Navy Task Force that is setting up the American Antarctic outposts, to call on the tractor men to break ranks. He asked them to gather around him so that they could hear his shouted words.

"You have got a tough job ahead of you, but I know you can do it," he said. "If you stay on the marked road, you're going to be all right. We have the utmost confidence in your ability to get through."

He paid special tribute to the men of the base who, during the long frigid winter night, made preparations that enabled the tractor train to start today. In particular, he lauded Comdr. Herbert W. Whitney of Arlington, Mass., who wintered here as commander of the Navy outposts in Antarctica, and Lieut. Comdr. Robert E. Graham of Bellingham, Wash., who is in charge of the base and of the aviation unit here.

Finally, he paid tribute to Comdr. Paul Frazier of Higginsville, Mo., who is in charge of the placing of the Byrd station. Then he handed the United States flag to Warrant Officer Young to be raised at the Byrd station.

The designated position of this outpost is near the center of the only unclaimed sector of Antarctica.

On the opposite side of the continent a Soviet expedition is preparing for a similar tractor journey that, in the next week or two, is expected to start inland toward a projected outpost at the geomagnetic pole to be known as Vostok.

WASHINGTON, Dec. 25 (AP).—Nineteen Navy men driving the heaviest tractor train ever assembled in the Antarctic arrived at Byrd Station Sunday, Navy dispatches from Little America disclosed today.

By midnight they had one building completed and a place for the tired drivers to rest.

The tractor train arrived 18 days and two hours after departure from Little America. Chief Warrant Officer Victor Young of Wickford, R. I., proud of the time record, said the men in the train ust "didn't know when to quit."

AF Globemasters Leave Fuel-Short Polar Base

By DON GUY
Associated Press Staff Correspondent

McMURDO SOUND, Antarctica, Dec. 20.—The United States Air Force has flown the last of its Globemasters out of the Antarctic because fuel is short and the weather warm.

The Navy tanker Nespelen is on its way to McMurdo to relieve the gasoline shortage, but the runways used by the big planes need a break in the Antarctic summer to get back in shape.

Temperatures have been above freezing here part of every day during the last week. Runway surfaces have become rough and slushy.

One of the two Globemasters leaving yesterday for New Zealand was damaged earlier in a landing accident. Emergency repairs were completed but it was to make the 2,250-mile flight to Christchurch with its nose wheel fixed in its downward position. Final repairs will be made in New Zealand.

The City of Oregon, another Globemaster damaged and partly burned in a landing mishap, has been abandoned and towed off the end of the McMurdo runway. Civilian technicians have been salvaging electronic gear and undamaged parts from the plane.

Seagoing members of Operation Deep Freeze also were having their troubles.

A broken pipe flooded one of the engine rooms of the icebreaker Atka as it headed through the Ross Sea for this base. The Atka pumped the room dry and got under way again with two engines out of commission.

The two icebreakers are escorting four cargo ships through the ice of the Ross Sea about 100 miles from McMurdo. They are expected to reach the edge of the thicker ice about 20 miles out tomorrow. From there they will cut a wedge shaped channel through 8 to 10 foot ice to a point five miles from McMurdo.

After the channel is cleared, the thin-hulled tanker will move in and pump its load of fuel through five miles of hose.

Tractors make up the top priority cargo on the other ships. The Navy plans to plow out a new aircraft runway here alongside of the present 6,000-foot strip. The old runway has taken the pounding of takeoffs and landings of the 90-ton Globemasters for nearly two months.

The planes have dropped more than 500 tons of supplies at the United States base being built at the South Pole as part of the International Geophysical Year program and at another base on Marie Byrd Land. The planes are scheduled to return next month to complete the job. The new ice strip is expected to be ready by then and the weather is expected to be colder.

SNOWBOUND—A Navy oil tanker is just that after being caught in a storm at Hut Point Mooring, McMurdo Sound.

Navy personnel lay fuel lines for the petroleum gas and oil system between the Coast Guard icebreaker Eastwind and fuel storage tanks.

A RECORD ICEBERG SEEN IN ANTARCTIC

LITTLE AMERICA V, Antarctica, Nov. 17—The U. S. S. Glacier, the Navy's most powerful icebreaker, has sighted an iceberg more than twice the size of Connecticut.

The berg was sighted by the Glacier early this week about 150 miles west of Scott Island. The ship reported it was 60 miles wide and 208 miles long—or more than 12,000 square miles, as against Connecticut's 5,009.

According to the United States Navy sailing directions for Antarctica, the largest berg hitherto reported was that seen Jan. 7, 1927, off Clarence Island by the Norwegian whale catcher Obb I. The ship said it was 130 feet high and roughly 100 miles long. Both these gargantuan icebergs were of the tabular variety typical of Antarctica. This type consists of a section of continental ice sheet that has pushed out a great distance over the sea before breaking off—a situation that does not arise in the Arctic. The tabular berg has a flat top and is of uniform height, drawing roughly 700 feet of water.

It was the "calving"—that is, breaking off—of such an immense wafer of ice at the Bay of Whales sometime between 1948 and 1955 that deprived the original Little America of its harbor. Hence this camp, built early this year, had to be set up on Kainan Bay, thirty-five miles to the east.

U. S. POLAR PARTY TO LIVE IN STYLE

Camp at South Pole to Have Showers, Washing Machine and a Clothes Drier

McMURDO SOUND, Antarctica, Oct. 25—Within a few weeks there should be shower baths at the South Pole.

The last men to visit that spot almost forty-five years ago had to drag their food, fuel and tents on a sledge. Even as they reached the pole, their diaries show, they suspected their fate. They died frozen and starved on the return march.

The twenty-four young Americans of a Navy construction crew that is to camp at the pole while building a scientific station there will arrive by air. Their camp will boast not only showers but a washing machine and a clothes drier.

By coincidence two members of the United States party bear the names of members of the British group that perished in their heroic bid for the pole.

The commander of the party is Lieut. Richard A. Bowers. One of his crew will be Donald J. Scott, Utilityman Third Class. Capt. Robert Falcon Scott of the Royal Navy led the ill-fated British party to the pole and Lieut. H. R. Bowers was one of his companions.

Lieutenant Bowers, 28 years old, was graduated from Sheffield Scientific School at Yale University. He lives at Quonset Point, R. I., and is a member of the Navy's Civil Engineering Corps.

Those going to the pole are hand-picked men. The entire group of ninety-three men who wintered here near Scott's first Antarctic camp at Hut Point were selected from a reservoir of Navy volunteers. Each of those chosen has been trained in several skills.

The cook has spent his free hours taking apart and reassembling the tractors that will be parachuted over the pole. The hospital corpsman has been trained as a cook and welder. Both the men and the dogs have made short trial trips during the winter night, when the mercury dropped to 67 degrees below zero.

During the long winter virtually the whole camp helped in the packing of 270 tons of supplies for the pole into more than 200 specially cushioned bundles for parachuting. Two hundred and thirty tons of fuel also will be dropped. The bulk of these supplies will be taken to the pole by Air Force C-124 Globe masters.

U. S. Party Lands, Starts South Pole's First Base

By Ansel E. Talbert
Military and Aviation Editor
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IN FLIGHT OVER THE SOUTH POLE, Nov. 20.—The United States began construction today of the world's first base and scientific station at the geographic South Pole.

Two ski-equipped Navy R-4D transport planes, similar to the old twin-engined DC-3s, landed an advance party of eight men and eleven dogs at the pole in the brilliant "midnight sunlight" between 12:43 and 1 a. m.

An hour later, the planes took off again from the flat, snow-covered surface with the aid of fifteen rocket "take-off assist" units each. These were needed in part because of the rarefied atmosphere 10,000 feet above sea level.

The advance party, left behind in 29 degrees below zero cold, was to determine in a matter of hours the location of the pole within a mile or two by a series of sightings on the sun.

Two giant Air Force C-124 Globemasters closely supported the landing operation while themselves remaining in the air. One parachuted a vessel vehicle—the tracked jeep of the Antarctic. It landed undamaged and was put to use within ten minutes. This was followed by a drop of sleds, skis, camp equipment and supplies.

The operation was preceded yesterday by an unscheduled weather reconnaissance flight to the pole from McMurdo Sound, 750 miles away. A Navy four-engined R-5D had to cancel its weather mission because of engine failure.

This correspondent was one of four press observers flying with the air-drop Globemaster, piloted by Col. H. A. Crosswell, commander of the 18th Air Force task unit supporting the Navy's Antarctic Task Force 43.

Rear Adm. George Dufek, commander of Task Force 43, his air adviser, Capt. William ("Trigger") Hawkes, of Jersey City, and his weather officer, Comdr. John A. Mirabito, of Boston, were in the cockpit with Col. Crosswell. The plane, serving temporarily as the admiral's flagship, is named "The State of New Jersey."

Adm. Dufek called the landings an outstanding example of inter-service co-operation. He particularly commended Capt. Oscar Cassity, of Gainsville, Ga., the Air Force officer responsible for perfecting the air-drop techniques used today.

The first landing today was made by Lt. Comdr. Conrad Shinn, of Spray, N. C., with Capt. Douglas L. Cordiner, of Washington, D. C., as his co-pilot. Comdr. Shinn made the first airplane landing in history at the South Pole on Oct. 31.

In the second R-4D today were Lt. Comdr. Roy E. Curtis, of Keene Valley, N. Y., pilot, and Lt. Ray E. Hall, of Freelandville, Ind., co-pilot. The navigators were Lt. John R. Swadener, of Elkhart, Ind., and Ensign William L. Smallwood, of Warsaw, N. Y.

BIG PLANE CRASHES ON POLAR RUNWAY

LITTLE AMERICA, Antarctica, Nov. 30—An Air Force C-124 Globemaster tripped on a snow bank last night as the plane was coming in for a landing at McMurdo Sound after having made a cargo drop over the South Pole.

The plane caught fire, but all aboard escaped without injury except the pilot, who sustained a broken leg. The rescue of the crew was due in large measure to the courageous action of the crash crew that was alongside as the plane came to a halt.

This was the third of the giant Globemasters to crack up while landing on the ice runway at McMurdo. In neither of the other two mishaps were there injuries to personnel.

The Globemasters are said to be the largest transport planes in operation. They cost about $1,800,000 apiece. They have been trying to land on the smoothest section of the ice runway, a stretch only about 3,000 feet long.

In last night's accident the plane landed short. One wheel dug into snow and the left landing gear gave way. The pilot managed to keep the plane on the runway and it skidded to a halt.

As the pilot lowered himself from the cockpit on an escape rope, he lost his grip and fell twenty feet to the ice, breaking a leg.

Prices Discourage Whaler

ST. JOHN'S, Nfld. (Canadian Press)—Whale oil prices are not high enough this year to tempt Newfoundland's only whaling concern. A company spokesman says prices have increased in the last two years, but not enough to make operations worth while.

The New York Times (by Walter Sullivan)

The Navy men who will set up the camp at the South Pole have spent the winter just ended at McMurdo Sound training for the venture. The new camp will not only boast modern mess hall facilities like these, but will be equipped with shower baths and a washing machine.

8-Ton Tractor 'Chuted to Pole

By DON GUY
Associated Press Staff Correspondent

McMURDO SOUND, Antarctica, Nov. 28 (AP).—An 8-ton tractor and a toothbrush floated gently down to the South Pole today.

They were dropped to 19 Americans building a United States scientific outpost at the south end of the world for use in the International Geophysical Year program.

The tractor, dropped on three 100-foot parachutes from 2,000 feet, will be used to speed construction.

The toothbrush, wrapped in a towel and tied to a bundle of oil drums, will be used by T/Sergt. Richard J. Patton, 31-year-old St. Louisan who made history's first parachute jump to the pole Sunday. He radioed back that he had forgotten to include his toothbrush when he packed his 'chute.

The tractor made a perfect landing and was observed in operation shortly after touching down.

Lt. Richard A. Bowers of Quonset, R. I., and Harrisburg, Pa., leader of the largely Seabee ground party, messaged the plane making the drops that all was well. He said his group was spending its first night at the pole in a heated building. The workers set up a portable wood frame building covered with insulated fabric. It is heated by an oil stove and equipped with cots. The task force had been using tiny survival tents.

The Air Force Globemaster making the tractor drop ran into trouble on its return to McMurdo Sound. It plowed nose down into a snowbank when landing and blocked the 6,000-foot ice strip at this base for a time. None of the 17 men aboard the plane, the State of Tennessee, was hurt.

Seabee crews with tractors tugged the 90-ton craft away and got the runway cleared three hours after the crash. A second Globemaster returning from a pole run landed safely after being instructed to conserve fuel and wait until the runway was cleared.

The State of Tennessee was piloted by Col. H. A. Crosswell of Atlanta and Miami. The plane's nose wheel collapsed when it set down, causing it to skid into the snowbank.

Sergt. Patton's jump to the pole was made in an effort to learn why some parachutes carrying equipment had failed to open or become detached. Heavy equipment had been buried an estimated 30 feet in the wind packed snow when the parachutes failed. Since Patton's arrival most of the drops have been successful.

The Air Force had been using an explosive device to disconnect the parachutes after landing and prevent the high winds from whipping the attached equipment away. For the tractor drop, an electric gadget was used to release the parachute the instant the vehicle landed.

PROGRESS IS MADE ON A BASE AT POLE

Antarctic Commander 'Very Pleased' With the Work —3 Planes Turn Back

By WALTER SULLIVAN

LITTLE AMERICA V, Antarctica, Nov. 23—Rear Admiral George J. Dufek said today he was "very pleased" with the progress being made toward establishment of a base at the South Pole.

In the effort to set up a base at the pole, eight men were landed eight miles from there Tuesday. Yesterday three ski-equipped transport planes set forth from McMurdo Sound with seventeen more men for the construction of a camp at the pole. They turned back when they learned by radio of bad weather there and at their refueling station near the foot of the Queen Maud Mountains.

As soon as Lieut. Richard A. Bowers of Quonset Point, R. I., leader of the construction crew at the pole, signals his readiness, a group of C-124 Globemasters will drop supplies ranging from a tractor to panels for prefabricated huts.

Admiral Dufek said eighteen flying days would be needed for the drops. He hopes they will be completed by mid-December. Construction of the base would be finished a month later, according to the plans.

Flights of the Globemasters must be completed before bay ice from which they are operating in McMurdo Sound breaks up in the summer thaw. It is now early summer in the Antarctic but heavier ice on the sound seems as solid as ever. The C-124's land on wheels.

The eight Americans who were landed near the Pole told an Air Force plane that flew over them Wednesday: "Everything's fine."

Spare parts were dropped to them Wednesday for minor repairs to the Weasel, a small tracked vehicle, that was parachuted to them Tuesday. Once the repairs are made the party will shift its camp to the Pole. If repairs prove impracticable, Lieutenant Bowers said Wednesday, he planned to use a dog team that was landed with his party Tuesday.

Captain William Hawkes, Admiral Dufek's air adviser, said take-off of the two planes that landed at the Pole Tuesday had been simplified by a rise in temperature since his landing there three weeks ago. At that time the mercury stood at 58 degrees below zero. Tuesday the temperature was 29.2 below.

LITTLE AMERICA, Antarctica, Nov. 27—The Air Force completed today its ninth drop over the Navy Seabees who are preparing to build a scientific station at the South Pole.

About 500 tons remain to be parachuted on a planned schedule of three drops daily.

Volunteer 'Chutist Drops at South Pole To Help Speed U. S. Base Construction

McMURDO SOUND, Antarctica, Nov. 26 (AP).—The lonely United States colony near the South Pole swelled to 19 men today with the arrival of two planeloads of construction workers.

The new arrivals joined eight men who had been living in tents on the below-zero, snow-swept plateau since they were landed Tuesday and a St. Louis sergeant who parachuted down to join them yesterday.

The sergeant, Richard J. Patton, volunteered to jump in to direct Globemasters which will parachute 450 tons of supplies for the scientific base to be built at the Pole.

Two ski-equipped Navy Dakotas landed the 10 construction workers, taking off again for the main operation Deepfreeze Base at McMurdo Sound after 30 minutes on the polar snow.

Arrival of the reinforcements was expected to give the construction work a big boost. Bad weather had delayed the second landing. Another flight is planned soon to fly in five more construction workers and Dr. Paul A. Siple, the Antarctic veteran who will head the scientific party wintering at the polar base during the international geophysical year (IGY).

The chief of the construction group at the pole since last week, Lt. Richard A. Bowers of Quonset, R. I., and Harrisburg, Pa., reported by radio that all his men were getting adjusted to the two-mile-high altitude and were well and happy.

SERGT. RICHARD J. PATTON
Parachutes near Pole

Sergt. Patton's jump, the first such in the history of the Antarctic, was the 32d of his 14 years in the Air Force. Now 31, he has served in Burma, China and Korea.

Crewmen of the plane which dropped him said the sergeant tangled briefly in the shrouds of his parachute but quickly cleared himself and floated down to the snow. Cutting himself free in a 12-mile wind, he picked up some batteries that had been dropped with him and joined three other men working on a big weasel vehicle which had been damaged in a drop last week.

One of the trio, Thomas T. Montgomery of Vineyard Haven, Mass., reported the weather had averaged about 25 degrees below zero in their six days there. This was better than had been expected.

The 10 construction men flown in today were Charles M. Salton of Quonset; Richard J. Prescott, Perry, N. Y.; Howard A. Hisey, Colorado Springs, Colo.; Charles A. Bevilacqua, Woburn, Mass.; William R. Goodwin, Louisville, Ky.; Donald J. Scott, Syracuse, N. Y.; Edward H. Hubel, New York City; Raymond R. Spiers, Bowers Hill, Va.; Clarence A. Wagner, Lafayette, Ind., and Harry R. Williamson, Stockton, N J.

All had spent the winter at the McMurdo Sound base. Spiers, the white-bearded cook, took along three Thanksgiving hams for the men already there

THAT SOUTH POLE CAN BE REAL COOL

Siple, at Remote Antarctic Base, Says Mercury Can Hit 120° Below Zero

MCMURDO SOUND, Antarctica, Dec. 8—Temperatures at the South Pole may drop to as low as 120 degrees below zero, Dr. Paul Siple reported from that point in a radio message last night.

He said measurements of the ice sheet's temperature showed it was 62 below at a depth of fifteen feet. The indications were that old readings were even lower farther down.

Since temperatures at such depths tend to reflect average year-round levels, Mr. Siple believes the mercury may get down to 120 below in winter. It is now summer in Antarctica, whose seasons are the reverse of those in the Northern Hemisphere.

Dr. Siple is to lead the scientific party that will winter in a camp being built at the Pole. The work is being done by United States Navy Seabees with materials and prefabricated panels dropped from Air Force planes.

On the basis of his preliminary measurements, Dr. Siple believes the mean annual temperature at the Pole is about 60 compared with 11 below at Little America ,on the coast. Since the mercury at Little America sinks to 78 below during the winter, he thinks his estimate of 120 below is justified.

So far as is known here, no human beings have experienced temperatures even approaching such levels. The extremes at the South Pole are due to high elevation and remoteness from the sea. The polar plateau is 10,000 feet above the sea level and 800 miles from the nearest open water, with its tempering influence on climate. The North Pole lies in a region of drifting ice floes at sea level.

The sun rises and sets only once a year at the poles. The winter night lasts for six months, permitting the atmosphere to become extremely cold.

At an elevation of several hundred miles, where the sun's rays can peep around the edge of the globe, there is constant light. One of the objectives of the polar station will be to determine the effects of this phenomenon.

Air Force Globemasters have dropped more than 300 tons of supplies near the Pole since the airlift began three weeks ago. Some items such as fuel drums have been dropped without parachutes and have buried themselves in the snow. This has kept the twenty-four men at the Pole busy digging as well as hauling, but they have kept up with the deliveries.

All supplies except some last-minute items on ships should be delivered by a week from today.

The polar party is building seven prefabricated huts to house the eighteen men of the wintering party and their equipment.

Navy Man Describes Life At Bottom of World

By DON GUY
Associated Press Staff Correspondent

McMURDO SOUND, Antarctica, Dec. 3 (AP).—A lanky, bearded Navy man came back from the South Pole yesterday with the first account of life at the bottom of the world in 44 years.

"It's miles and miles of nothing," said Lt. John Tuck, jr., of Auburn, Mass. But he added the cheerful note that because of 24-hour daylight: "Reveille was when we got up."

Lt. Tuck spent 12 days at the pole with a party of American Seabees building a base for scientists who will live there during the pitch black Antarctic winter from March to October.

The tiny American colony brought the first human life since the polar summer of 1911-12 to the vast, white two-mile high plateau. No one before has ever spent more than two or three days there.

Lt. Tuck flew back to this Antarctic coast base in one of two ski planes that took Dr. Paul A Siple of Washington, D. C., and five more Seabees to the pole. Their arrival boosted the South Pole's population to 24 men.

"The first couple of days we went around like actors in slow motion," Lt. Tuck said.

This was because of the thin air at the pole's high altitude, and the 25-degree-below-zero cold even in this period of summer.

Nowadays the sun shines 24 hours a day at the pole.

"The time of day depends on where you stand because all time zones and date lines converge at the pole," Lt. Tuck said.

The lean young man standing 6 feet 3, spent last winter at this United States base 800 miles from the pole and has been picked to head the Navy team that will winter at the pole itself with the scientific expedition headed by Dr. Siple.

Since meeting Dr. Siple, Lt. Tuck has decided to make a life study of the scinetific problems of Arctic zones. He was graduated from Dartmouth two years ago and hopes after his sojourn at the Pole to do graduate study. Dr. Siple became interested in the same field in 1928 when he accompanied the first Byrd expedition to Antarctica.

South Pole Base Bulges As Population Hits 34

By DON GUY
Associated Press Staff Correspondent

McMURDO SOUND, ANTARCTICA, Dec. 7.—Engine trouble stranded the 10-man crew of a United States Navy plane at the South Pole today.

The crew had flown to the two-mile-high polar plateau with supplies for a 23-member Seabee task force building a base there for International Geophysical Year observation.

The flyers took their polar delay philosophically. Before starting their repair job, they broke out sleeping bags from their survival kits and turned in at one of the three shelter huts the Seabees have built in the last two weeks.

The grounded plane is a ski-equipped Navy Neptune with two jet and two propeller engines. One jet engine failed as it tried to take off from the gritty ice and snow at the pole.

Members of its crew are Lt. Comdr. John H. Torbert, North Kingston, R. I., pilot; Capt. Douglas L. Cordiner, Washington, D. C., commander of an air squadron in the Navy's Deep Freeze polar operation, and Maj. Stan A. Antos, Buffalo, N. Y., both co-pilots; T. Sergt. David J. Sullivan, San Benito, Tex., navigator; Emmet H. Gann, Soddy, Tenn., aviation machinist's mate; Clair F. Jones, jr., Carmi, Ill., electronics mate; Frank Owen Snyder, Memphis, Tenn., aviation machinist's mate; James D. Crisp, Dawson Springs, Ky., aviation machinist's mate; Daniel Rello, Detroit, Mich., aviation electronics mate, and Minor B. McDaniel, Pharr, Tex., aviation electrician.

McMURDO SOUND, Antarctica, Dec. 8.—The Americans building a base at the South Pole still had unexpected guests today—10 United States Navy airmen.

In addition there are 23 Navy Seabees building six shelter huts for an International Geophysical Year observation base, plus the chief scientist for the base, Dr. Paul A. Siple of Washington, D. C.—making the present pole population 34.

Capt. Douglas L. Cordiner of Washington, commander of airmen for the Navy's Deepfreeze operation who was aboard the Neptune, messaged for parachute delivery of parts for the crippled engine. They were taken with other cargo for the IGY base by a Globemaster piloted by Col. H. A. Crowell of Atlanta, Ga.

The Seabees and the stranded crewmen are experiencing an average temperature of about zero, although it has ranged in the last three weeks from 32 below to 17 above.

McMURDO SOUND, Antarctica, Dec. 10.—Ten airmen—stranded at the South Pole by engine trouble—have repaired their plane and returned to this Antarctic coast base.

They brought back word that the 24 United States Seabees building a scientific station at the Pole were happy, warm and well fed "but they naturally will be glad to get the job done and get home again."

The Navy Neptune's two jet and two propeller engines were not powerful enough to take off unaided from the 2-mile high icecap, as the crew had hoped.

After a 7,000-foot run and the extra blast of 16 Jato (jet assistance takeoff) bottles, the plane still was so low its skis picked up one of the red flags marking the polar runway and brought it all the 800 miles back to McMurdo Sound.

3 Heroes Hailed At Antarctica

McMURDO SOUND, Antarctica, Dec. 19.—United States Navy blue dress uniforms were donned for the first time at this frozen air base today. The occasion was the ceremonial commendation of three enlisted men by Rear Adm. George Dufek for heroism in putting out a fire on a wrecked Air Force Globemaster on Nov. 29.

The three were commended for risking their lives when the fire threatened the explosion of 3500 gallons gasoline in the tanks of the big troop carrier. Many deaths might have resulted.

COMPACT AIRFIELD ANTARCTIC TASK

U. S. McMurdo Sound Party Found the Packed Snow or Sea Ice Inadequate

By WALTER SULLIVAN

McMURDO SOUND, Antarctica, Nov. 4—During the frigid winter night that recently ended in Antarctica, the men of this camp struggled in many ways—but in vain—to construct a packed snow runway.

They were finally forced to clear eight to fourteen feet of snow from the projected site on the frozen waters of McMurdo Sound.

The compaction of snow to form air strips as hard as concrete, capable of handling the heaviest wheeled aircraft, has been achieved in the Arctic and at Little America in the Antarctic. The application of the same technique to the Antarctic as a whole would make its vast ice sheet, far greater in size than Europe, into one huge potential airfield.

The failure of the attempt here may have been due to the lack of proper equipment. Experiments began last April 14. On July 23, when the period of perpetual darkness still hung over McMurdo Sound, they were abandoned.

The work program of the camp was reorganized for the vast job of clearing all snow from the 6,200-foot runway site and aircraft parking areas. The men worked two twelve-hour shifts around the clock, six days a week, with reduced shifts on Sundays, in a race to get the job done in time. The temperature at times was 60 degrees or more below zero fahrenheit.

Work continued until Oct. 18, when the first plane flew in from New Zealand. More planes arrived in quick succession to use the field in the wide-spread undertakings of the United States Antarctic program for the researches of the International Geophysical year 1957-58.

Snow compaction at Little America, 400 miles east of here, was achieved in 1947 by the continuous passage of tractors on a road from the camp mess tent to the airfield. The snow became so hard that wheels put on a twin-engine Douglas transport did not leave even a tire print. A 600-foot floating shelf of snow and ice was under the packed strip.

LT. CDR. CANHAM

After trying various methods here, the Navy Seabees attempted to water the surface to ice it. Holes were drilled down 14 or 16 feet to open water. Hoses were inserted and seawater pumped out and sprinkled on the surface.

It was miserable work in the subzero cold, with the water freezing to everything it touched. Ice also built up inside the hoses until they were clogged and had to be thawed out. Drifting snow mixed with the water, resulting in a slush that froze into a treacherous surface. A 2,000-foot stretch of runway thus flooded had to be abandoned and a new site chosen.

Lacking specialized equipment, the men had to improvise. Holes were punched in pipe to make sprinklers, for instance.

Attempts were made to lay out strips in three areas. One is the present airfield, about two miles southwest of Hut Point. Another site was chosen on the blue ice, swept clear of snow by strong winds, which lies at the head of the sound, toward Mount Discovery.

The drilling of ice cores there revealed a porous layer about three and a half feet down that might collapse under the ninety-ton weight of an Air Force C-124 Globemaster. The site was abandoned.

Another strip was marked on new ice in the sound. The ice was only four feet thick when work began, but Lieut. Comdr. David W. Canham Jr. of Mount Clemens, Mich., commander of the base, correctly predicted that it would get thicker.

Every week during the winter he and two or three companions made reconnaissance trips across the ice of the sound. They found that the ice varied in thickness but seemed to grow at a rate of roughly 3 inches a week.

Their drilling showed that this continued until mid-August when the thickness stabilized at about 78 inches. Commander Canham believes this was because the blanket of ice and snow became thick enough to insulate the waters below from freezing any higher.

Clergy of 2 Faiths Lead Antarctic Yule Service

By DON GUY
Associated Press Staff Correspondent

McMURDO, Antarctica, Dec. 25 (AP).—A Catholic priest and a Protestant minister joined last night in leading a Christmas eve service in the world's most southern church.

Men half a world away from their homes sang Christmas carols in the still Antarctic air.

Father John C. Condit of Jefferson City, Mo., who built his chapel from sections of four left-over quonset huts and a plywood steeple, and Chaplain Peter Bol of Arcadia, Calif., and Holland, Mich., shared the conduct of the service.

The chapel in the snow is the only building in the Antarctic continent devoted wholly to religion.

Men of all faiths helped Father Condit to build the structure before the 4-month winter night began.

Chaplain Bol, here on a planning conference, was kept by fog in Ross Bay from returning to Little America.

Father Condit had already rehearsed his Christmas program.

But last night he turned over all the speaking parts to Chaplain Bol and took all the musical parts himself, and played the organ for such carols as "It Came Upon the Midnight Clear."

Chaplain Bol led a responsive reading with a passage from Isaiah telling of the Christmas story, and based his sermon on the gospel of Luke.

The choir included Camp Comdr. David Canham of Mount Clemens, Mich., and Dr. Isaac M. Taylor of Chapel Hill, N. C.

The length of beards in choir and congregation marked whether a man had wintered over or had been in camp only a few months.

David Griesez of Lafayette, Ind., a Seabee, gave a violin solo. The altar was decorated with fir branches from Oregon and pines from New Zealand by Robert Barger of Peoria, Ill.

The altar itself had been fashioned by Charles A. Bevilacqua of Woburn, Mass.

Behind the chapel are the high volcanic hills with white snow fields and windblown patches of black lava — and the crosses marking the memory of seven men who have died in South Polar exploration.

South of the chapel is Observatory Hill, mounting the cross of oak raised by survivors of the tragic Scott expedition in 1912.

8 Navy Men Flown From South Pole

McMURDO SOUND, Antarctica, Dec. 25 (Delayed) (AP).—Eight of the 24 men stationed at the bleak South Pole were flown to this air base today as the first step on the long way home.

The men had celebrated Christmas at their lonely post a day early, in anticipation of their departure.

One bachelor in the party, Yoeman Robert L. Chaudoin of Long Beach, Miss., volunteered to stay through the winter, but the Navy turned down his offer because all billets for South Pole personnel had been filled long ago. Yoeman Chaudoin said life at the pole was "real luxurious."

Six prefabricated buildings have been erected and the temperatures usually are around a mild zero in this summertime. All eight men had wintered here, where the temperatures were 30 to 49 below for weeks at a time.

The other seven men leaving the pole were William Goodwin of Indian Fields, Ky.; Howard Hisey of Colorado Springs, Colo.; Richard Prescott of Perry, N. Y.; Colon Roberts of Ellabell, Ga.; Donald Scott of Mattydale, N. Y.; Gordon Tyler of Winton, Calif., and Harry Williamson of Stockton, N. Y.

Fifteen of the 16 men still at the pole will be flown out in future flights. Dr. Paul Siple of Washington, D. C., will stay there this winter.

The eight men were brought out by two Navy Dakotas and a Neptune. One Dakota pilot making the trip for the first time was Lt. Comdr. Edward Waldron, jr., of New Orleans.

Tropical 'South Pole'

McMURDO SOUND, ANTARCTIA, Dec. 14 (AP).—The South Pole was imported from tropical Panama.

It is thirteen feet long, made of bamboo, painted bright orange with black stripes and did not reach its geographic location at the bottom of the world until yesterday.

The bamboo pole was airlifted to the geographic pole yesterday and dropped by parachute to the United States Navy team building a camp there

The pole will serve as a staff for the American flag atop the tallest building of the South Pole station.

SCIENCE GROUP SAILS TO THE ANTARCTIC

SAN DIEGO, Calif., Dec. 27 The San Diego-based seaplane tender Curtiss left for the antarctic today on what was described as "one of the greatest exploration adventures ever undertaken by man."

Dr. Laurence M. Gould, director of the U.S. antarctic program for the International Geophysical Year, told fellow scientists and members of the tender's crew that they were engaged "in a pioneering effort which defies comparison."

Gould and about 26 other scientists left on the Curtiss from North Island Naval Air Station today for the 8,000-mile voyage to anarctica by way of New Zealand.

They will join 100 other American scientists in an all-out attack on the antarctic for the purposes of scientific research.

The Curtiss and its 490-man crew will return here late in March.

More than 300 scientists from 12 nations will be engaged in the antarctic research program as part of the IGY, which runs from July 1, 1957, to July 1, 1958.

"The sailing of the Curtiss here today," Gould asserted, "marks the beginning of our scientific exploration of the last great unknown land mass in the world. We are going to an inhospitable continent to discover answers to scientific questions which must be answered if man is to understand his environment.

"You sailors and scientists are taking part in the greatest scientific drama that man has ever played."

A Navy band played Anchors Aweigh and a group of wives and friends of crewman waved from the dock as the Curtiss slipped down the channel toward Point Loma.

Its most distinguishing features are huge cranes on the afterdeck that are used to hoist seaplanes aboard when it serves as a tender. In the Ross Sea, the cranes will hoist scientists and supplies from the ship onto the Polar ice shelf.

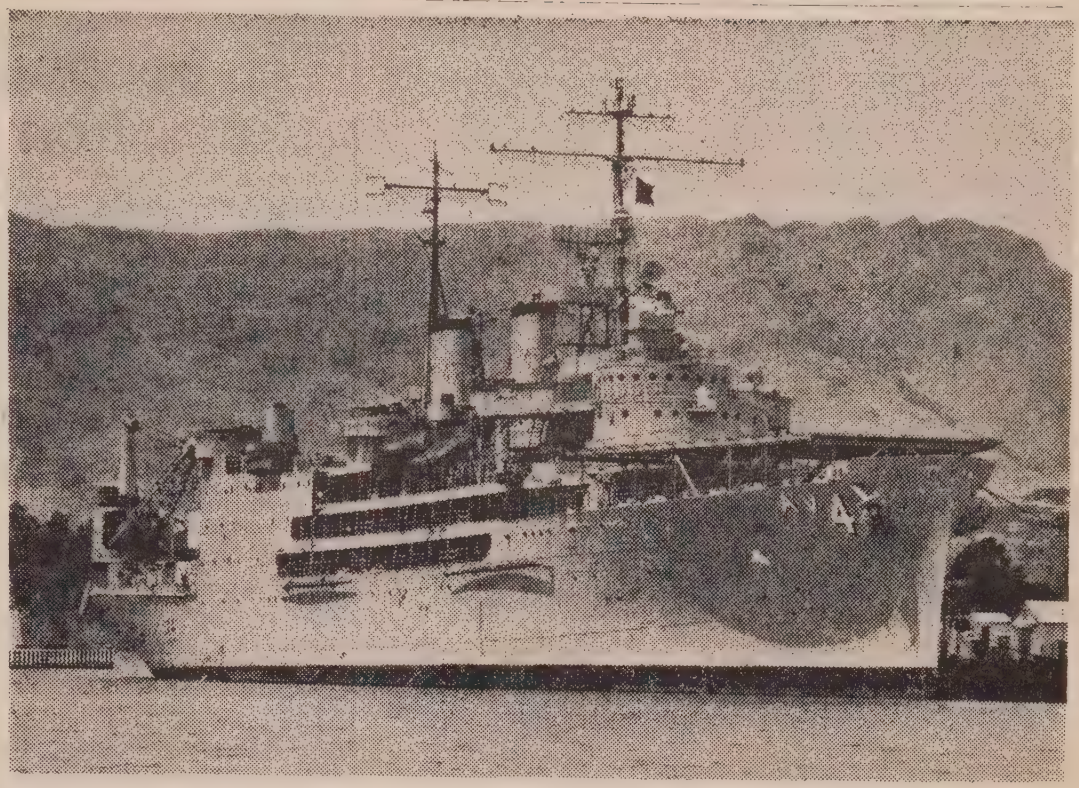
An 18-year-old Boy Scout, Richard L. Chappell of Eggertsville, N.Y., sailed with the Curtiss for a year's stay in the antarctic.

Selected by a national committee of scientists and scout officers, he will serve as an aid to the expedition scientists.

Study of the antarctic ice cap will be one of the major projects for U.S. scientists, Gould said.

The expedition will start a long-time study to see if the antarctic ice mass, which is big enough to cover both the United States and Europe, is melting as fast as that in the Arctic.

Steady melting of antarctic ice, Gould predicted, could engulf every seaport in the world.



CARRYING SCIENTISTS TO THE ANTARCTIC.—The United States naval seaplane tender Curtiss (9090 tons) on her way to the Antarctic with International Geophysical Year scientists.

Pole Called Possible Reason For Drought

SAN DIEGO, Calif., Dec. 28 Dr. Harry Wexler, director of meteorological research for the U.S. Weather Bureau, said here yesterday that, among other things, the cold expanses of the Antarctic continent might explain prolonged droughts in California and other southwestern states.

Wexler discussed the importance of Antarctic weather research aboard the seaplane tender Curtiss a few minutes before the ship cast off for the south polar International Geophysical Year expedition. Wexler, as chief scientist of the U.S. IGY antarctic program, was scheduled to sail on the Curtiss but changed his plans and left by plane yesterday.

He said the Antarctic plays a double role in long-term weather forecasting.

"In the first place," he said, "forecasters need the whole picture of weather. That means they need data from all over the globe, not just the middle latitudes, and Antarctica is part of the globe. We need data from there to complete the map.

"But there is a greater importance to Antarctic weather than just completing the map. This is the coldest area on earth. It is the source of a mass cold air surrounded by warmer ocean air. The interaction of the two-air masses creates the turbulence of the 'roaring forties,' the world's greatest belt of low atmospheric pressure.

"This cold air mass of the polar region exerts a tremendous effect on the weather of the southern hemisphere and its effects probably spread to our hemisphere. What is the cause of our great droughts of the southwestern United States? We don't know. But they may come from the southern hemisphere, from changes in the radiation from the sun or cosmic radiation.

"The first step in long range forecasting is to understand the forces at work."

Wexler also discussed the problem of measuring carbon-dioxide in Antarctica. This problem, which has been extensively studied at the Scripps Institution of Oceanography here, concerns the effect on the world's climate of an increase in carbon-dioxide production brought about by industrial combustion.

Wexler said that since there is no industrial carbon-dioxide production at the South Pole, it is an ideal area to determine whether the air of the whole world is affected by the industrial areas.

If the carbon-dioxide content of the atmosphere is increasing on a world-wide basis as many scientists fear, Wexler said this could increase the temperature of the earth, cause melting of the polar ice caps and a rise in the ocean level of from 140 to 200 feet. He pointed out that such a rise of the ocean would inundate San Diego and other world seaports.

Nations to Cut Whalers

Whaling companies in Norway, Britain, the Netherlands and Japan agreed in 1956 to reduce the number of whalers by thirty-five.

BRITONS RESUME ANTARCTIC WORK

Main Expedition Is Returning to Shackleton Base Where Eight Men Wintered

The following article was written by the leader of the main party of the British Antartic expedition.

By Dr. V. E. FUCHS

LONDON, Nov 7—When the S. S. Theron [the British Antartic expedition's ship] left Shackleton Base last March 23 because of a sudden freezing of the sea, the expedition left 350 tons of stores on the sea ice at the foot of the Filchner Shelf Ice.

Six weeks later a northerly blizzard broke up the ice and all the material for the eight-man wintering party remaining below this Shelf was swept away to the west on drifting floes.

The lost stores included the entire stock of twenty-five tons of coal, all the wooden sections of a prefabricated workshop, 240 barrels of liquid fuels, two tons of chemicals for making hydrogen and other items, including a tractor.

Most important of the scientific losses was the breakdown of the upper air research program through a lack of hydrogen to fill radiosonic ballons. The lack of fuels led to great discomfort for the wintering party.

Sufficient food and fuel had been carried to safety of the Filchner Shelf, however, to ensure the survival of the party until the arrival of the ship in the coming 1956-57 season. When the party began the building of the main hut, the weather was good while the foundations were being built. But the temperature continued to fall during February and March, the mean for the latter month being 5 degrees Farhenheit.

The hut, with floor space of seventy by thirty feet, contains a living room, kitchen, wireless room, bathroom, photographic darkroom, workshop, generator room and store rooms. There also is an attic for storing materials that must not be frozen.

The hut is constructed to carry an overburden of 300 tons of snow, for it is likely to be buried during the second year. Already the outside stores are reported to lie beneath snow drifts fifteen feet deep. We are taking with us in the supply ship Magga Dan a special mine detector.

Perhaps the most unpleasant thing during the building of the hut was the constant wind, the average speed being 17 to 20 knots, which means that each month one can expect six or seven days of blizzard with winds in excess of 50 knots—sometimes rising to 100 knots.

The party reported building operations ceased when the temperature dropped lower than 45 below zero Fahrenheit. The dogs also felt the lower temperature and before the sun was lost below horizon on May 4 they were housed in snow tunnels, where the temperature remained constant at plus 10 degrees Fahrenheit, even though outside it was often in the minus 60's.

The eight men used the hut for all activities but slept in two-man tents outside—everyone clothing himself completely in windproofs, footgear and gloves before venturing into the dark and usually blizzard conditions. Never before has anyone lived in tents through the Antarctic night in so high a Latitude. [The Filchner Ice Shelf is at Lat. 78 S, Long. 50 W, at the head of the Weddell Sea.]

Although throughout the winter the sea naturally froze, whenever calm conditions prevailed, the sea ice in front of the Shelf was continually broken up by wind and current. For us who are to return to the base in January, this condition is a good omen as it is likely that an open water lead we followed close to the coast will again be there.

Throughout the southern winter it has been possible to exchange messages concerning progress at Shackleton and at home. Since the return of the sun on Aug. 20, conditions at Shackleton have steadily improved. Recent messages have told of many activities with which the men are now occupied.

At the end of September two of the party made a short dog-sledge journey to Vahsel Bay, about twenty-five miles east of the base, to survey the coast where it joins the Eilchner Shelf and to hunt seals for dog food.

Meanwhile, the two headquarters of the expedition in London and in Wellington, N. Z., have been preparing for the coming assault on both sides of the Antarctic Continent.

TWO POLAR UNITS SAIL

British Antarctic Groups Leave on Magga Dan

LONDON, Nov. 15—Two British Antarctic expeditions left here today aboard the 2,100-ton vessel Magga Dan.

One group of eleven consists of members of the British Commonwealth Trans-Antarctic Expedition, led by Dr. Vivian E. Fuchs. It will attempt the first 2,000-mile crossing of the Antarctic Continent.

The second group is part of Britain's contribution to the Antarctic phase of the 1957-58 International Geophysical Year beginning next July. Its twenty-one members on board the Magga Dan are led by Col. Robin Smart, who is also the expedition's medical officer.

The Magga Dan will function as a weather ship on her journey to the Antarctic, relaying meteorological data back to Britain.

ANTARCTIC RESCUE TOLD

British Helicopters Remove 2 Men Stranded on Island

LONDON, Nov. 11 (UP)—The British Admiralty announced today that two of four men marooned for several weeks by an ice pack in the Antarctic have been rescued by helicopters.

The other two crossed the ice on foot and returned safely to their base on Lent Island.

The British frigate Protector reported to the Admiralty that the rescue was made Friday by the ship's two helicopters. They hovered over the pack ice and lifted the men off Roux Island where they had been stranded.

Hero of Everest Sails for Pole As Head of New Zealand Group

By WALTER SULLIVAN

ABOARD THE ENDEAVOR, at Sea, Dec. 22—The pride of a nation set sail in this ship last night as she began her voyage south with the New Zealand element of the Commonwealth Trans-Antarctic Expedition.

The goal is one that has been dreamed of by explorers since early in the century—the crossing of the Antarctic continent.

Aboard this ship is Sir Edmund Hillary, conqueror of Mount Everest and a national hero in New Zealand. He is to lead the group that will lay a trail toward the south from McMurdo Sound on the Pacific coast of the ice shelf.

On the Magga Dan, which headed south from London last month, is Dr. Vivian E. Fuchs, whose party will start from the Filchner ice shelf on the Atlantic coast and attempt to reach the Pole. From there he would continue on to a rendezvous with Sir Edmund near Mount Markham, which is on the western edge of the Ross Sea Shelf.

The date for their meeting has tentatively been set for the last week of January, 1958.

The emotions of Britain and New Zealand are particularly wrapped up in this venture. Unlike the other current Antarctic expeditions, it is being largely supported by public subscriptions. School children have donated their pennies to help buy the huskies, the vehicles, the sleds and the rations.

From Wellington on, this ship has stopped in each of the New Zealand ports on her southward journey so that the people who had contributed could see her. At Christ Church, where Capt. Robert Falcon Scott departed on his last voyage, Sir Edmund laid a wreath on the memorial to the ill-fated explorer of 1912.

As Scott lay dying on his return from the Pole, he wrote to Sir James Barrie, the playwright, "We are showing that Englishmen can still die with a bold spirit fighting it out to the end." His words seem to echo in the memories of the men aboard this ship. They appear to be determined to prove that the old spirit lives on.

The final port of call from which the vessel departed was Bluff, the southernmost harbor in New Zealand. The town and the vessels berthed there were gay with flags.

Sir Edmund Hillary

Aboard ship are fifty-seven men and thirty-six dogs. The little ship was built for Britain in the United States as a tender for antisubmarine nets. She is bulging at the seams. Even on deck there appears to be no room for more cargo.

Twenty-two of the men are members of the expedition. The others comprise the ship's complement. Most of the dogs are so big that they hardly can turn around in their sizable kennels on the forecastle. Three of the huskies, however, are puppies whelped only a few days ago.

An additional nineteen men of the expedition are going to McMurdo Sound in United States naval vessels that also are carrying about two-thirds of the expedition's dunnage.

Sir Edmund hopes to reach the sound within two weeks, but the time of arrival will depend entirely on ice conditions. An attempt to repair or replace one wing of the Auster scouting plane aboard was unsuccessful, so the vessel will not have the aid of aerial reconnaissance.

SOVIET POLAR UNIT EXPLORES U.S. SITE

Russians Make 480-Mile Trip to Check Area of Future Outpost of Americans

LITTLE AMERICA V, Antarctica, Dec. 1—A Soviet expedition in Antarctica has journeyed 480 miles east from its base to investigate an area where the United States plans to establish an outpost.

The region was discovered in 1947 by a plane from the United States Navy seaplane tender Currituck. Since then it has twice been visited by United States Navy expeditions. In 1948 a survey party landed on an archipelago in the area now known as the Windmill Islands.

This was reported in a cordial message received here today from Prof. Mikhail M. Somov, a specialist in sea ice studies who is the leader of the Soviet group. The Soviet expedition and the United States party, which is based on the opposite side of the polar continent, have been exchanging information on the progress of their work and their methods of weather observation.

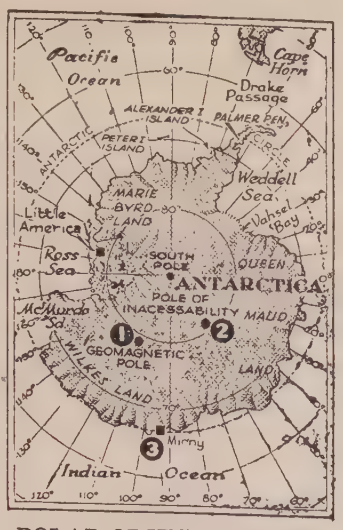
The base of the Soviet expedition, called Mirny, is near the Haswell Islets on the coast of Antarctica south of the Indian Ocean. Vincennes Bay lies to the east, a junction of the Knox and Budd Coasts. It is fringed by numerous ice-free peninsulas and islands.

The message from Professor Somov was addressed to Cmdr. Herbert W. Whitney, who for the last year has been commander of the Navy's stations in Antarctica. He said the Soviet expedition was happy to hear of the successful establishment of an American scientific station at the South Pole. The Soviet scientist said it "undoubtedly would be "a very reliable contribution to realizing the International Geophysical Year program."

He added that Soviet inland journeys would start after the arrival of ships this week. These treks will take the Russians to the Geomagnetic Pole and the Pole of Inaccessibility, both in the heart of the continent. The latter is at the point most distant from the sea.

Professor Somov said his expedition had conducted "field scientific explorations" along the coast to the east and west from Mirny. He did not say whether this was done by plane, ship or surface vehicle.

In particular, he continued, the expedition investigated an "archipelago and a group of nunataks on Meridian 110—Thirty East." This is the location of Vincennes Bay. A nunatak is the top of a mountain that otherwise is submerged beneath the ice sheet. He described the area as being "curious," geographically speaking. Possibly the Russians were unaware of its earlier exploration by Americans.



POLAR OBJECTIVES: The Soviet plans to set up bases at two points, (1) and (2), and supply them from the permanent station at Mirny (3).

Within a few weeks the United States Coast Guard icebreaker Northwind and the Navy attack cargo ship Arneb are scheduled to head for Vincennes Bay to establish a station there. It will be one of six such scientific outposts to be set up by the United States in the Antarctic. One of them will be manned jointly with New Zealand.

At Vincennes Bay there are to be twenty-seven scientists and supporting personnel. Since the coast is largely rockbound, the plan is to use amphibious techniques to land supplies and prefabricated buildings rather than unload them directly onto the ice, as has been the custom elsewhere in Antarctica.

Professor Somov also reported that the Soviet outposts named Pioneerskaya and Oazis had "extended their research activities." The former is inland on the continental plateau. The latter is in the Bunger Hills area between Mirny and Vincennes Bay.

The Soviet ships en route to the Antarctic, according to Soviet press reports, are the Diesel-electric icebreaking cargo ships Ob and Lena, and the motor ship Kooperatsia. They were said to have sailed from Kaliningrad in early November with a new team of scientists and support personnel for the bases, as swell as new supplies.

Professor Somov will continue to be the expedition leader with A. F. Tceshnikov, former leader of Drifting Station No. 3 at the North Pole, as chief of the continental units. The ships are under the command of I. V. Maximof.

According to the latest press reports from the Soviet Union, a dozen men are to be stationed at Vostok, the base at the Geomagnetic Pole whose elevation is estimated by the Russians at 11,500 feet. This presumably is based on their air reconnaissance of the area a year ago.

Another ten men will be at the base named Sovietskaya at the Pole of Inaccessibility, 1,250 miles inland from Mirny. While tractors apparently will tow the ready-made huts to Vostok, cargo planes also will be used to supply the inland stations.

U. S. Observer To Join Soviets In Antarctica

CAPE TOWN, South Africa, Dec. 15 (AP).—Gordon D. Cartwright, of Washington, D. C., a top scientist in the United States Geophysical Year program, arrived today to join a Soviet expedition to the Antarctic.

He will spend about a year with Russian field scientists at a Soviet base at Mirny in the Antarctic. He will join the Soviet expedition aboard the Soviet ship Kooperatzia here Tuesday.

"My own work," he said, "will be both in making field observations and in the analysis of observations made by other Antarctic stations.

"I hope to be able to carry on two or three projects, especially in making photographs of cloud time lapses. I'm taking an especially modified camera and photographic equipment with me."

Mr. Cartwright, 47-year-old chief of the United States Weather Bureau Division of Observations and Stations, is assistant to the chief scientist of the United States program for the 1957 Geophysical Year

He is the only American who will be working with Soviet scientists in the program under agreement between the United States and Russian Geophysical Year committees.

ARGENTINE UNITS SAIL

Antarctic Group to Explore Weddell Sea Area

BUENOS AIRES, Nov. 26—Four Argentine naval vessels left for the Antarctic today under the command of Capt. Helvio N. Guozden as the main body of Argentina's twenty-first annual expedition to the polar region. In the group of vessels were the modern icebreaker Gen. San Martin, a transport and two hydrographic ships.

One of the objectives of the expedition is to establish a new Argentine base on Thule Island, among the Sandwich islands, and continued explorations in the Weddell Sea.

Two United States scientists left with the Argentine expedition. They were Drs. William Rieder and Warren Wosters.

CHILE TO TAKE PART IN GEOPHYSICAL YEAR

SANTIAGO, Chile, Dec. 12—Chile announced her intention today to participate actively in the International Geophysical Year early in 1957 despite economic difficulties in financing an expedition to the Antarctic.

Congress allotted 75,000,000 pesos ($150,000) instead of the 130,000,000 asked, but support from private sources will be accepted if found necessary to carry out the program of scientific study through a two-year period.

An expedition of twenty-one members will leave Valparaiso Jan. 3 on the Navy transport Angamos. Ten will be engineering students from Catholic University.

Another group of students from the University of Concepcion, who will concentrate on the search for minerals in the Antarctic, will leave some time next year when American equipment is purchased.

JOINT POST ON BOUVET

Norway, South Africa, Soviet to Man Station

McMURDO SOUND, Antarctica, Dec. 10—Three strange bedfellows, Norway, the Soviet Union and the Union of South Africa, are preparing to operate a joint station off the Antarctic Continent.

The outpost will be on Bouvet Island, a partly ice-covered volcanic cone that rises out of the stormy sub-Antarctic seas. It is to be one of more than two score such stations conducting scientific observations in the South Polar region during the International Geophysical Year 1957-58.

Bouvet is in the Atlantic sector, about 1,500 miles southwest of the tip of Africa and 1,000 miles north of the Princess Astrid Coast of Antarctica.

According to the latest information available here the Soviet cargo-carrying icebreaker Ob is to visit Bouvet Island this month in quest of a station site. The Ob will then deliver cargo and men of the Soviet Antarctic Expedition to the main Soviet base at Mirny on the Queen Mary Coast in the Indian Ocean sector.

Bouvet Island has an ugly reputation. Actually discovered in 1739 by the French explorer Bouvet de Loziar, its existence was doubted by mariners until late in the nineteenth century. In 1927-29 the Norwegians, who now claim the island, built two huts there and provisioned them for shipwrecked sailors. In 1931, the huts had vanished, blown away by the furious gales of the region.

IGY Survey Team Of Japan Leaves

Japan Times, Tokyo.

Japan's team of 53 members to participate in preliminary observation in the Antarctic for the 1957-58 International Geophysical Year left Tokyo aboard the 2,400-ton vessel Soya at 11 a.m. Nov. 8

The team is headed by Prof. Takeshi Nagata, Tokyo University, authority on terrestrial magnetism.

The vessel, a former Government lighthouse-supply ship remodeled to withstand rough Antarctic seas and break through ice, is equipped with special facilities including two helicopters. It has a crew of 77 captained by Mitsuji Matsumoto.

More than 6,000 well-wishers were at wharf to cheer the departing ship after send-off ceremonies at the waterfront.

On hand were all members of the Antarctic Observation Coordinating Headquarters headed by Education Minister Ichiro Kiyose, Director-General Tatsujiro Torii of the Maritime Safety Agency, and members of the special Antarctic committee of the Japan Council of Science, including its chairman Dr. Seiji Kaya, as well as the kinfolk of the persons departing.

MSA and press planes and patrol-boats escorted the expedition ship out of port while other ships in port blew their sirens.

The ship will head for Singapore Friday noon, arriving there Nov. 22. It will reach Capetown Dec. 22 and will be joined there by the Umitaka Maru, an auxiliary ship, which left here in advance Oct. 25.

It will approach the Prince Harald Coast of the Antarctic Continent around Jan. 8, and begin landing operations in late January.

A base camp will be built and about 10 team members will be left behind throughout the coming winter.

The ships will leave about Feb. 15 and reach home April 16.

By WALTER SULLIVAN

Sept. 22

The Japanese will conduct studies of cosmic rays, the ionosphere, weather, terrestrial magnetism, the aurora, glaciology, seismography and geology in their Antartic work.

The leader of the Japanese expedition, Dr. Takeshi Nagata, is a geomagnetist and a member of the Japanese National Committee on the International Geophysical Year. The logistics and operations leader, Dr. Eizaburo Nishibori, returned to Tokyo this week after consulting with American polar specialists.

The party will be made up of a ship's crew of seventy-seven officers and men,, twenty-three scientific observers and a team of thirty supporting personnel for base construction and operation. Two Bell helicopters and a Cessna light airplane will be carried.

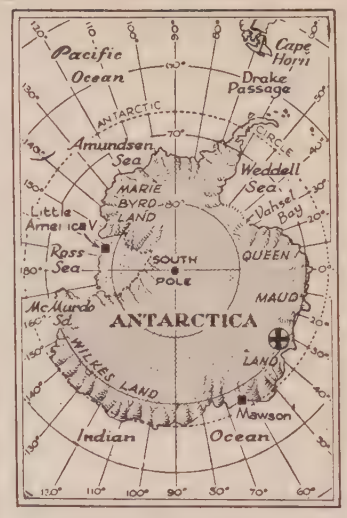
About ten men are expected to winter at the base the first year, if the base is set up. During the winter of 1958 the plan is to increase the party to thirty, including specialists in many sciences.

United States Navy seaplanes in 1947 photographed two parallel mountain ranges inland from the Prince Harald Coast and parts of these ranges were earlier photographed by planes from Norwegian whalers. Copies of these photographs have been given to the Japanese.

To enable them to reach these mountains, some of which lie more than 120 miles inland, the Japanese will have twenty dogs and three tracked vehicles. They have built a special plastic hut on sled runners in which they can live on the trail.

The primary support for the expedition is from the Japanese Government, and help has been furnished by collections in the schools. The Cessna is being provided by the Tokyo newspaper Asahi.

One of the problems, according to Dr. Nishibori, has been to devise a trail ration palatable to the Japanese. Various forms of American pemmican have been sampled—and greeted with gastronomic dismay. Rice, the normal basis of the Japanese diet, weighs too much per calory.

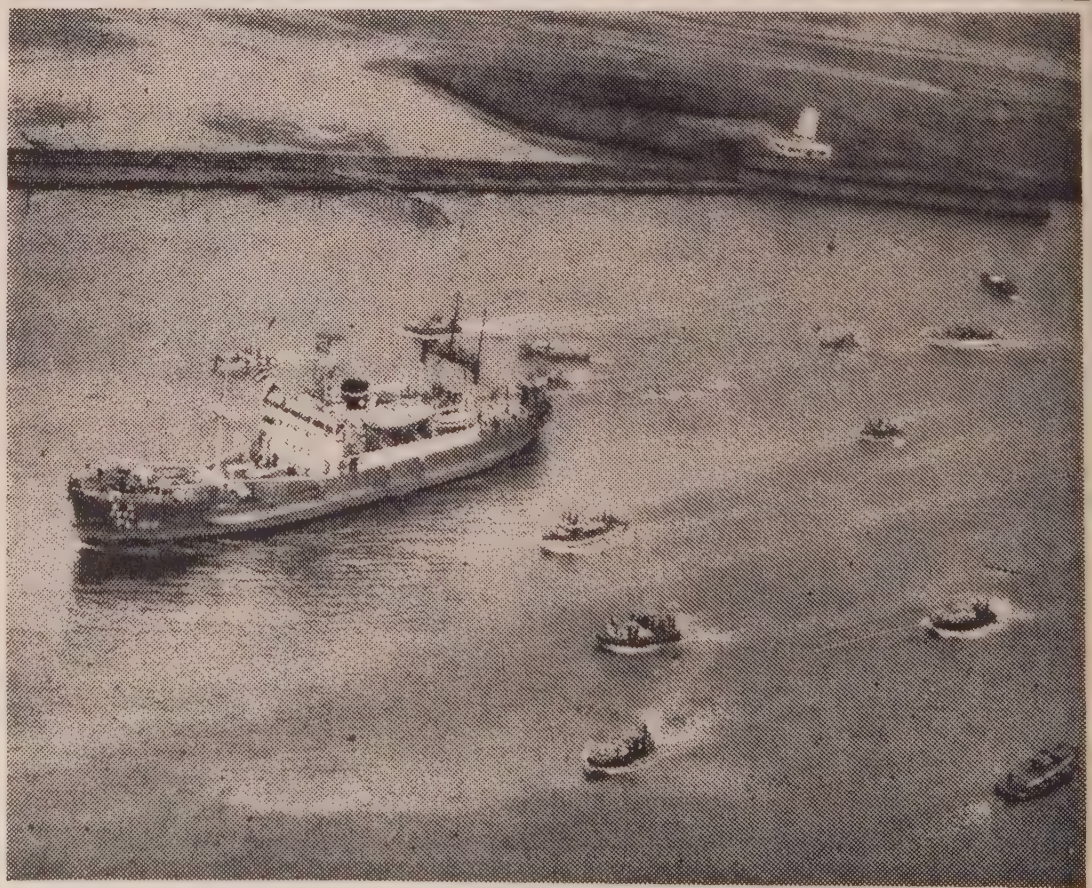


A Japanese expedition will seek to set up a base on the Prince Harald Coast (cross).

Dr. Eizaburo Nishibori

Dr. Nishibori plans to compromise. He will carry a form of pemmican on the trail with small quantities of rice to sustain the morale of his men.

The last previous Japanese Antarctic expedition, under Lieut. Choku Shirase in 1911-12, explored the Ross Sea area. Its ship, the Kainan Maru, gave the name to Kainan Bay, the site of the present Little America V.



BOUND FOR ANTARCTIC—The 2,400-ton expedition ship Soya sailed from Tokyo carrying the 1957-58 International Geophysical Year 53-member scientific observation team on 10,800-mile trip to Prince Harald Coast.

Japan Times, Tokyo.

BOTANISTS STUDY ALASKAN ARCTIC

Three From U. of Tennessee Investigate Ability of the Area to Support Life

KNOXVILLE, Tenn., Dec. 8—The United States is making an effort to learn more about its holding at the top of the world.

That is the report of three University of Tennessee botanists who spent the summer in the Alaskan Arctic.

The vast area, once visited only by Eskimos and explorers, is now attracting United States specialists in zoology, soils, geology, physiology, botany and many other fields, according to Dr. R. E. Shanks. Dr. Shanks is director of the University of Tennessee party, which has just completed its report.

Dr. Shanks said research activity in the American Arctic had been greatly stepped up in recent years. These modern "explorers" will someday provide an answer to possible uses of the new frontier, he said.

The task of the three botanists, for the second summer in a row, was to investigate the Arctic's ability to support life.

They worked through the Arctic Institute of North America, with support from the United States Office of Naval Research.

Dr. Shanks and two graduate students, Edward Clebsch of Clarksville, Tenn., and John Koranda of Detroit, were based at the Arctic Reserach Laboratory at Point Barrow, Alaska, more than 300 miles north of the Arctic Circle.

From this large Eskimo settlement they ranged the Arctic coastline. They traveled by bus, plane and amphibious jeep, floating down uninhabited rivers, observing plant and animal life, collecting specimens and checking their plant-growth "guage," the garden pea.

The garden pea, because it survives cold weather, is used by climatologists, who "read" plant-growth potential from its height, number of nodes, and number of leaves, Dr. Shanks said. Hence the botany team planted a series of patches from the coast to sixty miles inland.

At the coast, the peas barely broke through the ground. Inland they reached a height of four to five inches, compared to three feet when grown in Tennessee.

Although not encouraging from a gardening point of view, results were about as expected, the botanists reported. The ground, even in the June to August period when the sun never sets, thaws to a depth of only one to four feet in most places. It remains permanently frozen below that point. For this reason, he said, timber supports are unnecessary for coal mines.

Dr. Shanks said his investigations were just a beginning and that he hopes to continue them in future summers. The period of study is relatively short, he explained, since the coastal plain is free from snow and ice less than three months of the year. Also, he said, the area is so large it may offer much variety for a place that at first glance seems to be nothing more than a marshy, lake-studded land of grasses and stunted shrubs.

Arctic 2,000 Fathoms Deep

The Arctic Ocean consists of a sea 2,000 fathoms deep, a broad continental shelf and numerous islands

Soviet Rejects Mapping Of North Pole With U.S.

WASHINGTON, Dec. 7 (AP)—The Soviet Union has rejected a United States proposal to map the icecap in the North Pole region by joint air-photo operation.

The State Department made public tonight a note from Moscow that in effect said: The Soviet Union would be happy to send its planes into United States polar territory to help Americans make aerial photos of the ice there; but the Soviet Union wanted no United States planes taking pictures over Soviet territory in the Arctic Ocean.

State Department officials said the reply, dated Nov. 21, killed the idea of a mutual scientific venture.

The United States proposal of Sept. 19. suggested that planes, possibly with mixed crews, shuttle between Nome, Alaska, and Murmansk, Russia.

The venture was to have been part of the world-wide scientific undertakings of the International Geophysical Year, 1957-58.

Ship Abandoned in '55 Found Almost Unscathed

COPENHAGEN, Denmark, Aug. 6—A Norwegian freighter, the Jopeter, abandoned by her crew off the East Greenland coast eleven months ago, has been found almost undamaged.

The Jopeter was trapped in heavy ice south of Bontekoe Island, near Geographical Society Land. Her crew abandoned the 486-ton vessel after repeated attempts by a Danish vessel, the Kistadan, to drag her clear had failed.

The Jopeter was found afloat in Mount Norris Fjord on the east coast of Traill Island, near where she had been abandoned, by Dr. Lauge Koch, Danish explorer. He is the leader of the Danish Geological station on Ella Island. Dr. Koch reported that apart from a little water in the engine room, the Jopeter was in good condition.

Air Force Completes First Link In New Alaska Warning Relay

ANCHORAGE, Alaska, Nov. 29—Formal ceremonies at Elmendorf Air Force Base today marked completion of the first link in Alaska's far-flung White Alice communications network. It was designed to supplement the continent's defense warning system and general communications.

Inaugural telephone calls were placed today between Elmendorf and tiny Middleton Island in the Gulf of Alaska, 176 miles to the southeast. These calls brought into operation the first group of White Alice receiver and transmitter stations.

The system is called White Alice because that was the code name originally assigned to the project by the Air Force.

Construction work is continuing on the remaining White Alice stations that girdle vast stretches of Alaska's coastline and interior. They tie in with Distant Early Warning line of radar warning stations north of the Arctic Circle. Thirty-three stations are being constructed.

Western Electric Company, aided by several sub-contractors, began construction of White Alice in 1955 under an Air Force contract. When the entire chain of stations is completed in 1958, the over-all cost will have exceeded $100,000,000.

More than 3,500 construction and technical workers were engaged on the project during the peak of construction.

The facilities were designed to serve the Air Force by providing continuous contact with Alaska radar outposts and the D. E. W. line, but they also will be used by the Army and Navy, Civil Aeronautics Administration and other Government agencies as well as by commercial telephone and telegraph customers.

White Alice utilizes an advanced method of radio relay never before used on such a large scale. The new method provides telegraph and telephone circuits free from atmospheric disturbances and interruptions that often hamper communications in the North.

Engineers call the system "forward propagation tropospheric scatter." This is so because radio signals are beamed from huge 100-ton scoop-shaped antennas into the troposphere, a layer of air that extends about five miles upwards from the earth's surface. The antennas resemble outdoor movie screens and are about 60 feet high.

In the troposphere, the signal is "scattered" and a very tiny fraction of the energy sent out arrives at the receiving antenna. Identical antennas, spaced at distances up to 170 miles, are used to receive the signals and retransmit them if necessary.

Engineers say this method of communications is tailored to Alaska conditions because construction and maintenance of conventional wire circuits would be impossible in most of the areas served by the system.

For security reasons, route of network is given only approximately. Section from Anchorage to Middleton Island (lower right) is open.

Another type of system utilized by White Alice, but less extensively, is microwave relay. This system now is widely used in the United States.

Most White Alice stations are situated on mountain tops where radio conditions were found to be optimum.

Bell Telephone Laboratories played a major role in developing both the microwave and tropospheric systems and also contributed substantially to the White Alice project through special work by its scientific staff.

Operation and maintenance of the completed network will be by the Federal Electric Corporation. Each site will need a permanent crew for operation and maintenance. Some sites will require more than a dozen men.

Ocean Specimens Studied

The Soviet icebreaker Litke recently returned to Leningrad with samples of soil from the ocean bed along the Arctic Ocean, according to the United Nations Educational, Scientific and Cultural Organization. Some of the soil contained the remains of extinct organisms never before found in the Arctic basin. The finds are being studied by the Arctic Research Institute at Leningrad.

U.S. Drops Geese on Greenland

COPENHAGEN, Denmark, Dec. 23 (Reuters)—United States planes from Greenland bases are dropping cooked geese—traditional Danish Christmas food—at Umanak and other West Greenland settlements isolated by ice and snow.

Task Force Returning From Arctic Mission

WASHINGTON, Sept. 1

A battered Arctic task group of Navy ships and commercial freighters is now battling its way back to the open waters of the Pacific. The flotilla is expected to complete its passage from the ice-choked waters of the Northwest Passage in a few days. The operation will wind up this year's difficult supply mission to continental defense installations.

Navy officers said that merchant marine freighters — the largest fleet of them ever taken into the Far North—had done yoeman work in ice maneuvering.

The group under the command of Rear Admiral George C. Towner, has been in the Far North for two months, taking supplies to the western sector of the Distant Early Warning radar network.

The D. E. W. line installation, which spans the North American continent for a distance of 3,000 miles from Alaska to Baffin Island, is designed to give the Continental Air Defense Command four to six hours advance warning in the event of an air attack over the top of the world.

Other phases of the supply mission include the resupply of Air Force bases and other outposts in Northeast Canada, Labrador and Greenland; restocking United States bases on the west coast of Alaska and resupplying Department of Interior sealing station in the Pribiloff Islands.

A total of 121 ships, nearly 19,000 men and more than 500,000 measurement tons of general cargo and petroleum products in drums are involved in the entire operation, conducted both out of Atlantic and Pacific ports.

Fifty-six ships, including icebreakers, cargo carriers and landing craft, make up the Western fleet under Admiral Towner. Eastern operations are conducted out of New York.

According to reports reaching the Western group's flagship, the Eldorado, anchored at Point Barrow, Alaska, as nerve center of the mission, the steel-hard ice in such remote waterways as Coronation Gulf has taken its toll.

By late August, twenty-eight vessels of the group, including three icebreakers, had been damaged by ice. The icebreaker Burton Island sheared off two of her propeller blades on an ice floe. The twenty-seven other vessels received damage ranging from holes in the hull and ruptured fuel tanks to minor rudder and propeller damage. All are expected to be out of the ice zone this week.

Operations in the frozen wastes off the northern Alaskan and Canadian shores, an area totally unsuited to commercial shipping, are hazardous at best. The Arctic ice pack lies close offshore in the Arctic area covered by the group from Point Barrow, Alaska, to Shepherd Bay, near the magnetic North Pole.

Navigation is possible only during July and August. Melting of the single-season "winter" ice allows for narrow leads in the Arctic Ocean and the winding Canadian waterways. At any time, however, a sudden change of wind can compress large masses of solid pack ice near by, blocking progress.

Sudden movement of the Arctic ice pack and jamming of the seasonal winter ice were a constant double threat to the success of the project. To reach their objective through the ice, the ships and their icebreaker escorts often steamed miles out of the way to find a favorable lead.

There is always the danger of getting stuck in the ice and the prospect of spending a winter hard and fast thousands of miles away from the nearest warm-water port. During one critical period of the 1955 operation off Alaska it seemed likely that some of the ships would have to "winter in." However, at the last minute the wind changed, allowing the whole task group to leave.

Admiral Towner's men and ships completed delivery of 18,000 measurement tons of drummed petroleum products; 12,000 tons of general cargo and 7,800,000 gallons of petroleum in bulk to the western D. E. W. Line sector.

The whole operation was largely amphibious because of the lack of normal berthing facilities.

A type of war-built dry cargo ship, the 5,000-ton C1-M-AV 1, which has found little employment as a commercial cargo carrier because of limited cargo spaces, won honors this year in the difficult ice maneuver. It has emerged as the work horse in the Arctic operations, according to officers of the Navy's Military Sea Transportation Service, under which the assignment was carried out.

Loaded to draw sixteen feet of water, the ships carried more cargo farther into the Arctic than any other conventional type of cargo vessel. The shallow-draft C1-M-AV 1's are the only freighters, except L. S. T.'s, to get through Amundsen, Coronation and Queen Maud Gulfs—the route of the early polar explorers across the top of North America.

The vessels will have traveled more than 3,500 miles on the summer's job. To date not one of these stout, Diesel-driven ships has received any major damage. As a result of the successful operation of twenty of these vessels employed in the 1955 operation, seven more ships of this type were assigned this year.

The craft used in this year's D. E. W. Line resupply received special alterations earlier in commercial shipyards. Hull sheathing and internal strengthening were provided, and the ships were fitted with special extra-strong alloy propellers to resist the ice. Heavy-lift booms at two hatches permit the ships to carry landing craft for lighterage of cargo out of these hatches.

As a result of past experience, he ships, originally intended only for wartime use, have emerged as a highly useful "specialty ship" in the Arctic.

Icebreaker Ends 4th Mission to Arctic; Returns After 7 Months of Aiding Bases

The Coast Guard icebreaker Westwind returned to New York Dec. 7 after her fourth and longest Arctic assignment.

A week out of 15-below weather, the stubby, white 6,000-ton vessel rode into a 59-degree harbor at noon. She and her 200 officers and crewmen had spent seven months traveling 24,000 nautical miles off Canada and Greenland—aiding ships supplying northern military stations and doing assorted odd jobs.

The odd jobs included an annual resupply of the Royal Canadian Mounted Police station on Ellsmere Island, grappling under ice a foot thick for oil pipelines used by tankers, X-raying a village of thirty Eskimos as a public health experiment and resupplying air navigation stations in the area.

Her primary mission, along with three other icebreakers, was to cut paths and furnish navigation data to resupply sups for the Distant Early Warning radar network, which stretches from Alaska to the Northwest Territories. She also aided navigation into Thule Air Force Base in Greenland.

According to her skipper, Capt. Peter J. Smenton, 44 years old, of New London, Conn., her stint was the longest continuous one in the area for any icebreaker. She had left New York, her home station, on May 15.

Arctic cold, snow and ice is "old hat" to Captain Smenton, who has had close contact with them in his twenty-three years as a Coast Guard officer.

He has been on Bering Sea patrol in the Pacific, on Arctic supply and survey missions off Greenland and the Canadian Northwest and he also has spent time in the Antarctic in 1946 and 1947 when he took part in Operation High Jump.

For several days in September, seas encountered by the Westwind were fifty feet high. Ice that had to be cleared was three to five feet thick in spots, but her bow can smash twelve and sometimes fifteen-foot layers, the Coast Guard said.

The 269-foot ship was built in 1944 for $12,000,000. She was loaned to the Soviet Union under Lend-Lease in 1945 and was returned in 1952. She is one of three sister ships, the others being the Northwind, stationed in Seattle, Wash., and the Boston-based Eastwind.

The Westwind tied up at the New York Naval shipyard in Brooklyn.

U. S. Coast Guard

Capt. Peter J. Smenton

ALASKAN DELICACY

'Eskimo Cook Book' Gives Soured Sea Liver Recipe

SEATTLE, Wash. (AP)—Children in the Shishmaref, Alaska, school prepared the recipes for "The Eskimo Cook Book" in their own inimitable language.

Here is the one for sour seal liver: "Soured seal liver is made in the summer time. Place liver in enamel pot or dish and cover with blubber. Put in warm place for a few days until sour. Most of the boys and girls don't like it, except the grownups and the old people. I don't like it either."

Long Arctic Voyage Of 'Howe' Ends

Sept. 24.—Canada's most unusual annual health, welfare and administrative survey came to an end last week when the Canadian government ship, the "C. D. Howe", docked in Quebec.

Since late June the "Howe" has been in the remote regions of the Eastern Arctic, visiting settlements that have little, if any other, transportation contact with the outside world. The ship carried members of the Eastern Arctic Patrol from the Departments of Northern Affairs and National Resources, Health and Welfare, the RCMP and other government departments.

During its voyage more than 2,000 Eskimos, many of them from isolated camps away from the small northern settlements, came aboard ship for the health survey and welfare program. The medical party was completely equipped to take and develop X-rays, give medical checks, do dental work and give injections and vaccinations. A number of Eskimos, found to have active tuberculosis, were evacuated to sanatoria in southern Canada.

Apart from looking after the health and welfare of the Eskimos, Northern Affairs officials made an exhaustive collection of information on local conditions and discussed with residents their suggestions for dealing with local problems. During the coming Winter studies will be made of this material to formulate a basis for future policy in the developing Arctic.

This year's welfare program, conducted by the Department of Northern Affairs, had several innovations. After the Eskimos had been given their medical examination they were shown a health film with a commentary in their own language, entertainment films, listened to tape recordings, received mail, and some had their pictures taken. The tape recordings they heard were messages from relatives in sanatoria in the south. Then those on the ship were given the opportunity of recording messages in reply.

In addition, pictures of family groups were taken for delivery to friends and relatives in hospitals "outside".

Often the Eskimos came to the "Howe", in open whale boats, the favored, sturdy Peterhead boats, and sometimes in sealskin kayaks. At other times they were carried from shore to ship by the "Howe's" barges.

In some places ice or anchorage conditions made it impossible to use boats to carry the Eskimos to the ship. Then the survey became airborne and the ship's helicopter shuttled back and forth carrying the colorfully clothed visitors to and from the "Howe". In this way some native camps were visited that had never before participated in the survey.

In addition to carrying out annual inspection work, RCMP officials this year supervised the closing of the Craig Harbor detachment on southern Ellesmere Island, and its removal to Grise Biord, some 50 miles to the west. For years Craig Harbor, with its two-man detachment, was the sole Eskimo settlement on this huge Arctic island. The detachment was moved this Summer to an area much closer to the Eskimo camp on the southern part of the island.

During the first 3,000 miles of the 10,000-mile patrol, R. A. J. Phillips was officer-in-charge. J. C. Jackson took over this position for the remainder of the patrol. Dr. James Wiebe was chief of the medical party from Montreal to Resolute Bay

HOLE IN ICE STUMPS ESKIMO

QUEBEC, Nov. 3 (AP).—An airline pilot reports Eskimos are baffled by some of the things white men do in the Arctic.

Such as digging holes through 10 feet of ice when nobody's going to fish.

Capt. Gerald Lester MacInnis, telling about the Eskimos' bewilderment, explained the holes were dug along Canada's radar line to see whether the ice was thick enough to permit planes to land.

MAKES ARCTIC DISCOVERY: Dr. J. Louis Giddings Jr., Brown University anthropologist, holds pottery fragments between 3,000 and 4,000 years old. They were uncovered at site of the oldest "house" ever found in Arctic.

PROVIDENCE, R. I., Oct. 20—A "house" 3,000 to 4,000 years old, the oldest yet found in the Arctic, has been uncovered by a Brown University anthropologist, the university announced today.

It is described as the first oval house ever found in the American Arctic.

The discovery was made by Dr. J. Louis Giddings Jr., director of the Haffenreffer museum of Brown, at Bristol, R. I.

The find, he said, was made last summer on a rocky cliff overlooking Eschscholtz Bay, an inlet off Kotzebue Sound, more than 100 miles northeast of Bering Strait.

The discovery, his report stated, fills in a void in the region's chronology and gives weight to the theory of some scientists that the North American continent was not settled by mass migration from Siberia. Instead, they believe, that the area from Siberia across the American continent to northern Europe once was thinly settled by peoples who shared a similar culture.

Artifacts found at the site, and Dr. Giddings brought back about 200, lead him to believe the occupants of the dwelling were of a group somewhere between the people of the so-called "Denbigh complex" and the oldest Eskimos, called Paleo-Eskimos.

Traces of the people of the "Denbigh complex," who left no recognizable dwellings at their coastal camps, have been found at Cape Denbigh on North Sound, a branch of the Bering Sea.

The Eschscholtz find was made by Dr. Giddings and two companions, Melvin Reichler, a graduate assistant in sociology at Brown, and Robert Ackerman, an archaeologist from the University of Pennsylvania.

Looking across a long, narrow beach, they saw three oval depressions. Digging at one, they unearthed an oval area, about 42 by 24 feet, around which ten posts had been imebedded. The posts slanted toward the center. Within the space they found a smaller area that had formed the oval floor of the structure and was lower than what had been the surrounding earth. Lengthwise within that area were two curved rows of the impressions of posts, evidently for support of a sod roof.

The artifacts the group found include harpoon dart heads, arrow and spear heads, an adze head made of caribou antler with openings for the flint head and a handle, burins or stone grooving tools, bone needles and other tools and knives of slate and flint.

The expedition was sponsored by the Arctic Institute of North America.

Arctic Ice Moves Clockwise

Arctic Ocean ice moves slowly clockwise around the North Pole, pushed by prevailing winds and currents.

Deepfreeze Covers Being Flown Out

Dec. 2

PHILATELIC covers cancelled in Antarctica in connection with the Navy Department's Operation Deepfreeze I—the Government's 1955 expedition for geophysical and geographical explorations in the South Pole region—are beginning to arrive back in the United States.

A Navy spokesman at Washington had recently said that these estimated 500,000 covers, which spent 1955-56 winter in cold storage, could not be expected before next April. But last week the Navy disclosed that the mail is being put aboard airplanes, in Antarctica, as fast as space becomes available. It is flown to New Zealand, where it is transferred, again as space permits, to planes destined for various American ports.

The Navy hopes to continue this process until all the covers have been cleared at the Antarctica post offices, called Little America, Byrd Station and Pole Station. This job is being expedited because the three post offices must be made ready to accommodate the 250,000 additional covers now en route from the Norfolk, Va., Naval Base

A San Diego, Calif., electronics technician, John H. McCaffery, is acting postmaster in Antarctica. During his job of putting the three post offices into operation, one of his first problems was to find the Byrd Station canceling machine, which somehow had been covered with sixteen feet of snow. But his greatest task was getting covers through the several canceling machines. After being handled so frequently—in the United States, aboard ship, on sleds, and sometimes on planes—most of the covers were dog-eared and misshapen.

But Postmaster McCaffery feels he is being compensated for his tedious activity. Collectors who have already received their returned covers are deluging him with personal mail, not alone with friendly thank-you letters but with packaged gifts —and even feminine notes signed with lipstick kisses.

According to Little America V's Commander Herbert W. Whitney of Arlington, Mass., the covers now being processed came from collectors in the United States and seventeen foreign countries. He has informed Washington that the servicing of this mail is requiring an estimated 500 off-duty man hours.

RUSSIAN EXPEDITION—This 40-kopeck stamp honoring the Soviet Antarctic Expedition shows its two vessels, the Ob and the Lena. The map locates the expedition's base at Mirny on the Queen Mary Coast and two advance camps on the continental ice cap.

'Deepfreeze' Cachets

This year, the Navy has again agreed to oblige collectors of cancellations limited to not more than five cancellations per collector.

Ships of the Task Force will leave Antarctica in March or April, 1957, arriving back in the United States in April or May. If space is available in them, all philatelic mail cancelled in Antarctica prior to their departure will be returned at that time. However, as was the case in Operation Deepfreeze I, some of the mail may have to be held over in the Antarctic for return to the United States the following spring when the Task Force will complete its third trip of the expedition.

The Task Force Commander and participating ships will have official cachets for hand stamping envelopes mailed by the expedition's personnel.

ROSS DEPENDENCY

Oct. 14

Design of four stamps which New Zealand has prepared for use in Ross Dependency were received here from Wellington last week. Ross Dependency as a Government in Antarctica will be formally created when the New Zealand Trans-Antarctic Expedition arrives there in January.

A post office will be established at what will be known as Scott Base, named after Robert Falcon Scott (1868-1912), English Antarctic explorer who visited the Ross area earlier in this century. The postal items will be valid only at Ross on mail posted within the Dependency, although mint copies will be obtainable at some New Zealand post offices.

An 8-pence value pictures the Ross part of Antarctica, with New Zealand's position indicated to the north, on a map. On a 4p are portraits of Scott and another famous British explorer, Sir Ernest Henry Shackleton (1874-1922).

A 3p shows the ship Erebus surrounded by ice; this is the vessel of Sir James Clark Ross (1800-1862), Scottish explorer who found the Ross terrain and sea while on an 1841 voyage of discovery. Queen Elizabeth II is portrayed on a 1-shilling 6p.

Books and Authors

The experience of a French physician in the Antarctic are told in "Thin Edge of the World." Dr. André Migot, the author, was a member of one of the expeditions of scientists, engineers and meteorologists that occupy Kerguelen Island at intervals to maintain French sovereignty. The "bleak, windswept and forlorn" island is in the southernmost reaches of the Indian Ocean. After staying there a year, Dr. Migot joined an Australian expedition that penetrated the Antarctic itself to establish a weather station. His book will be published Jan. 9 by Little, Brown.

Two other books about Antarctic experiences are on publishers' lists. One will be "Through the Frozen Frontier," by Rear Admiral George J. Dufek, Commander, United States Naval Support Force, Antarctica. It will be issued in March by Harcourt, Brace, and will give Admiral Dufek's account of the second year of "Operation Deepfreeze," the Navy's five-year expedition to build and supply American scientific bases in the Antarctic.

The other book, by Paul A. Siple, will be issued by Putnam in the spring of 1958. Dr. Siple went to Little America in 1929 as a Boy Scout. He is one of four scientist-explorers who will head the United States' outpost in Antarctica during the International Geophysical Year, 1957 to 1958.

Biggest Plastic Chunk

THULE, Greenland.—The biggest chunk of molded-plastic construction now in use is probably the giant radome, 55 feet in diameter, which serves as a protective cover at the United States military base at Thule.

OTTO Y. SCHMIDT, EXPLORER, 64, DIES

Former Soviet Official Led Expedition in Arctic Area That Opened Sea Lane

MOSCOW, Sept. 8 (AP) — Dr. Otto Yulevich Schmidt, chief of the Soviet Northern Sea Route Administration in the Nineteen Thirties, died yesterday after a long illness. His age was 64.

Dr. Schmidt was a noted explorer . He commanded the first expedition ever to sail in a single season through the ice-flecked northeast passage from the North Atlantic to the Pacific, according to The Associated Press. The 1932 voyage paved the way for regular shipping through the cold seas north of Europe and Asia.

A year later, attempting to duplicate the trip, his ship was swept northward by a typhoon just a few miles short of the Pacific. It was crushed and sunk in the ice floes and 101 persons, including ten women and two children, were marooned for three months on the ice.

Their plight gripped the imagination of millions throughout the world. They stayed alive by eating polar bear flesh. Soviet planes finally rescued the party. Dr. Schmidt, suffering from pneumonia, was flown to Nome, Alaska, for treatment. On his way home he was fêted as a hero in the United States.

Dr. Schmidt was awarded the Order of the Red Star. Four years later he received the Order of Lenin and the title "Hero of the Soviet Union."

Dr. Otto Yulevich Schmidt on his departure for an Arctic expedition in 1937.

A geographer and mathematician, he also at various times was a professor at Moscow State University, chief editor of the Soviet Encyclopedia, and director of the Soviet State Publishing House.

Dr. Schmidt directed the 1937 mass flight of Soviet airmen across the North Pole to the United States. He led an expedition to the top of the world the same year. He reported finding bird life at the pole and also reported his worry about cracks in a polar ice field.

On his return to Russia, Dr. Schmidt proposed construction of a chain of "amphibian tank" bases in the Arctic for airline flights between Moscow and the United States. He was elected to the Supreme Soviet (Parliament) in 1938.

His Northern Sea Administration was blamed by the Communist press in 1938 for endangering half the Soviet fleet of ice-breakers and Arctic merchant ships in polar seas, and for the plight of four Russian scientists drifting on an ice floe in the Arctic.

Dr. Schmidt resigned that post in March, 1939, and announced he would devote his future to his new job as vice president of the Soviet Academy of Sciences. Then he dropped from the news.

Today the northeast passage is a regular shipping route for Siberian ports. A fleet of Soviet ice-breakers, aided by air reconnaissance, keeps the route open from June to September.

Hugh C. Mitchell, Astronomer, Calculated Data on North Pole

WASHINGTON, Nov. 21— Hugh Chester Mitchell, 79, renowned astronomer and geodesist, died of a heart attack at Doctors Hospital Tuesday.

Mr. Mitchell, who served for about 40 years with the Coast and Geodetic Survey before his retirement in 1945, was noted for calculating astronomic observations made by Admiral Peary during his North Pole expedition in 1909.

Mr. Mitchell's calculations and his testimony before a Joint Congression Committee were essential in establishing the authenticity of Admiral Peary's claim to the discovery of the North Pole. There had been no one with Admiral Peary during the two days he took observations on the pole who was qualified to substantiate the claim.

The scientist also did the caluculations on material from Admiral Bryd's North Pole expedition and his first South Pole expedition.

Early in the century, Mr. Mitchell helped John Hayford determine the exact shape of the earth.

He was a native of Jackson County, Texas. He completed work at Notre Dame University at the age of 18, earning both and A.B. and a B.S. degree in civil engineering. His A. B. degree was awarded in 1895, and his B. S. degree in 1896. After a period of ranching in Texas, Mr. Mitchell came to Washington, where he took graduate work at Catholic University and joined the Coast and Geodetic Survey in 1898.

Mr. Mitchell left the Federal Government in 1912-13 to conduct a geodetic survey for the city of Cincinnati. After again ranching in Texas, he returned to the Coast and Geodetic Survey in 1921. He was the agency's principal mathematician at the time of his retirement.

The author of technical publications, including pamphlets on city surveys and the definitions of geodetic terms, he was the chairman of the Committee on Surveying and Mapping Terms of the Federal Board on Surveys and Maps, which disbanded at the beginning of World War II.

From 1926 to 1934, Mr. Mitchell taught engineering astronomy at Catholic University.

In recent years he had worked with Dr. Joseph Wraight of the Coast and Geodetic Survey, providing data for Dr. Wraight's forthcoming book on the survey.

Adolphus Greely Dies, Son of Arctic Explorer

WASHINGTON, Sept. 23— Maj. Adolphus W. Greely, 67, son of the famous Arctic explorer, Maj. Gen. A. W. Greely, died today of cancer at Baker Memorial Hospital, Martinsburg, W. Va., after a long illness.

Maj. Greely came to Washington in 1932 as a top engineer with the Reconstruction Finance Corp. He retired 22 years later.

Born in Washington, January 2, 1889, Maj. Greely went to schools in Canada and Andover, Mass. He also attended Massachusetts Institute of Technology where he was a member of the St. Anthony Club.

During World War I he was major in the Signal Corps Later he was with a New York engineering firm.

Maj. Greely's hobby was designing and constructing model boats.

The Army's northernmost post, Fort Greely, Alaska, is named for Maj. Greely's father. In 1881, Gen. Greely led the Lady Franklin Bay polar expedition which set out to establish weather and observation stations in line with recommendations of the International Geographical Congress in Hamburg. The expedition, in which 18 of 25 men died, established the first wireless stations in the territory and won for Gen. Greely the title of "father of the Alaskan communication system" and the award of the Congressional Medal of Honor. The expedition reached what was then the farthest point north. Gen. Greely died in 1935.

Sergeant Dies in Crash

AUCKLAND, New Zealand, Dec. 5 (AP).—United States Air Force T/Sergt. Harold Stroop, 32, Greenville, S. C., was killed when his motorcycle collided with a train at a crossing near here today. Sergt. Stroop was flight engineer aboard the Globemaster Miss North Carolina, a plane taking part in Operation Deep Freeze.

GRANVILLE LINDLEY DEAD

Chief Engineer for Byrd on '33 South Pole Expedition

PROVIDENCE, R.I., Dec. 18— Granville Peabody Lindley, chief engineer for Admiral Richard E. Byrd on his 1933 expedition to the South Pole, died today at his home at Wickford after a long illness. He was 66 years old.

A career Navy employe until his retirement in 1955, Mr. Lindley had served both as an electrical and electronics inspector.

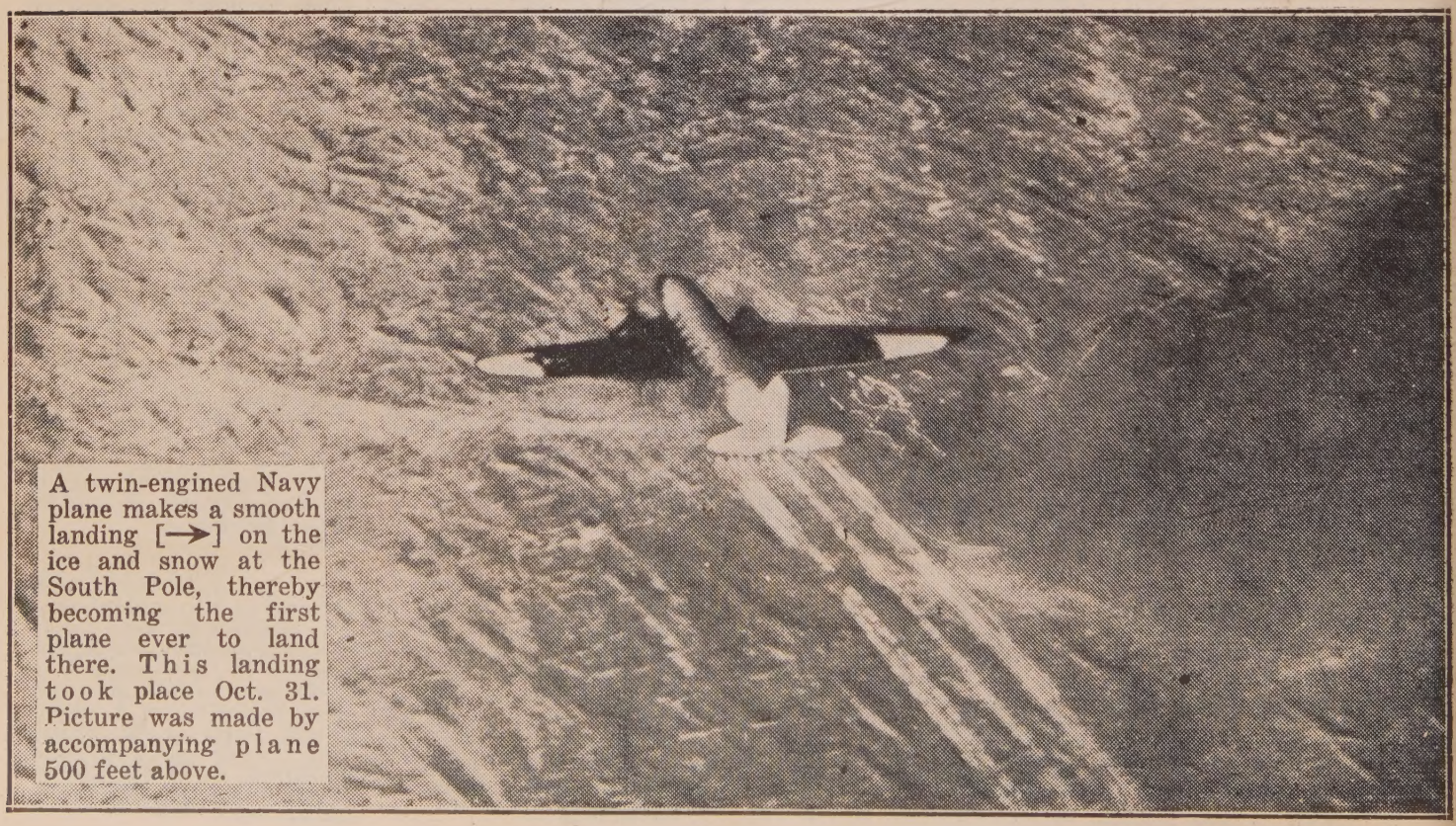
SIR REGINALD SKELTON

LONDON, Sept. 5—Engineer Vice Admiral Sir Reginald Skelton, a former Engineer-in-Chief of the Fleet, who was chief engineer of the British Antarctic Expedition of 1901-4 under Robert Falson Scott, died today at his home at Aldingbourne, Sussex. He was 84 years old.

Mr. Scott in his book, "Voyage of Discovery," made frequent references to Sir Reginald, commending his technical prowess, adaptability and paying tribute to the invaluable help he rendered to the expedition in conditions of extreme difficulty.

Sir Reginald had a distinguished career in the British Navy, largely concerned with submarines. He was Engineer-in-Chief from May, 1928, to December, 1932.

The U. S. Navy icebreaker Atka clears the way for the task group that has just completed resupplying the western sector of the Distant Early Warning radar network. The fifty-six-ship task group sailed from Seattle, Wash., in July.



A twin-engined Navy plane makes a smooth landing [→] on the ice and snow at the South Pole, thereby becoming the first plane ever to land there. This landing took place Oct. 31. Picture was made by accompanying plane 500 feet above.

NOTICE

THIS VOLUME IS INCOMPLETE

THE FOLLOWING ISSUES ARE ON ORDER:

NOS.44-56